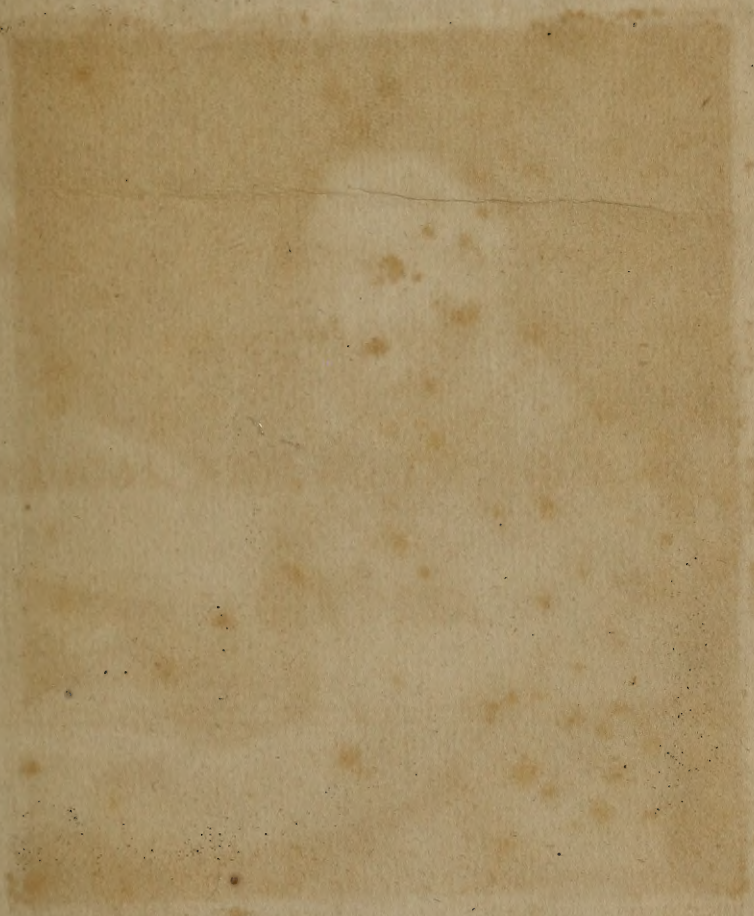
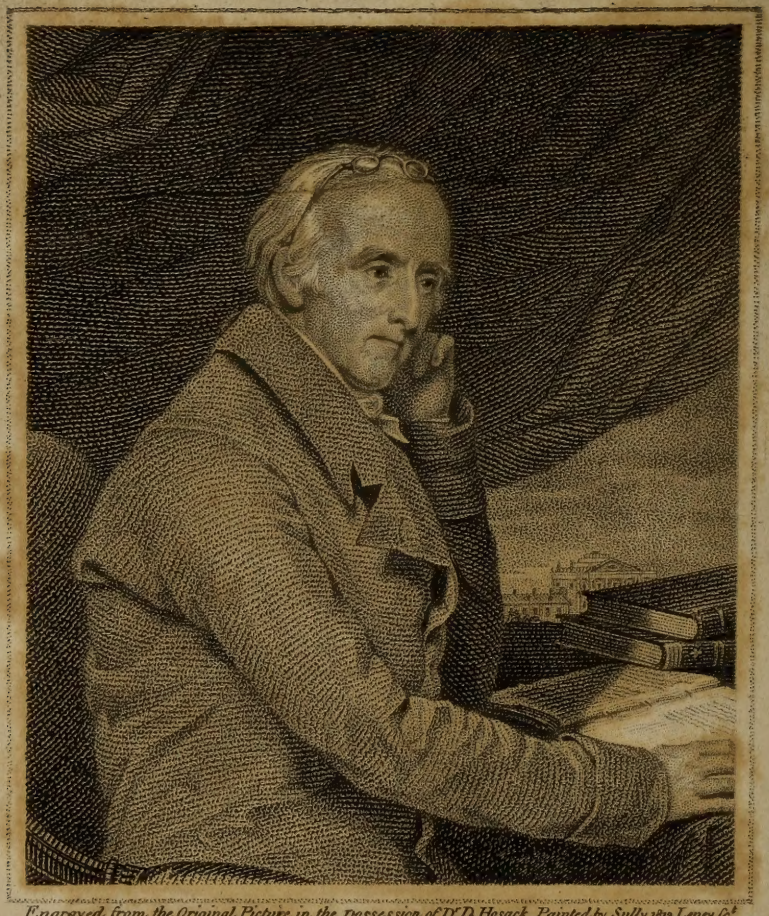
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AMERICAN

MEDICAL AND PHILOSOPHICAL

REGISTER.





Engraved from the Original Picture in the possession of D.r D. Hosack. Painted by Sully 1810. Leney sc.t

BENJAMIN RUSH M.D. L.L.D.

Wm Isaac Boggs
from his friend
D Hosack

THE

AMERICAN

MEDICAL AND PHILOSOPHICAL

REGISTER;

OR,

ANNALS

OF

MEDICINE, NATURAL HISTORY, AGRICULTURE, AND THE ARTS.

CONDUCTED BY

DAVID HOSACK, M. D. F. L. S.

Professor of the Theory and Practice of Physic and Clinical Medicine in the University of the State of New-York, &c.

AND

JOHN W. FRANCIS, M. D.

Professor of Materia Medica in the University of the State of New-York, &c.

VOLUME IV.

NEW-YORK:

PUBLISHED FOR THE PROPRIETORS,

BY C. S. VAN WINKLE.

1814.

TO THE HONOURABLE

JAMES KENT, LL. D.

CHANCELLOR OF THE STATE OF NEW-YORK,

First Vice President of the Literary and Philosophical Society, &c. &c.

This volume of the American Medical and Philosophical Register is inscribed, by *the Editors*, as a testimony of their respect for his distinguished talents, his professional and literary attainments; as an acknowledgment of the ability and fidelity with which he has discharged the duties of the various offices he has filled in the republic; and as an evidence of their esteem for the numerous virtues which so eminently adorn his character.

THE EDITORS.

PREFACE.

With this, the fourth volume, the Editors conclude, for the present, the publication of the *American Medical and Philosophical Register:* whether they will resume their labours at a future period, depends upon circumstances which it is unnecessary to mention.

In the Prospectus to the Register, issued in July, 1810, its designs and objects were fully stated; and since that time the work has made its appearance in numbers at the regular quarterly periods. It will be recollected, that one of our principal objects was the collecting and preserving whatever of interest might occur in the medical annals of this country, particularly in relation to our epidemical diseases, and to the malignant yellow fever with which we have been so often and so severely afflicted; and to establish the true line of distinction between those diseases which are of a foreign origin, and introduced among us, and such as are engendered at home. The papers on our epidemical disorders lay claim to attention, both on account of their number and intrinsic value; and on the important subject of the yellow fever, which involves considerations vitally interesting to society, and which is now reckoned inferior to no other topic of medical discussion, it will be perceived, that we have given a large amount of valuable and original information. The numerous facts which have been stated on this head have never been attempted to be contradicted; and the theory, as deduced from these facts, which has been maintained concern-

ing the origin and nature of this disease, has not in any respect been refuted, even by our warmest opponents, though repeatedly challenged to the contest. The best evidence of the value of our labours is the approbation with which they have been received both at home and in Europe.

In the review department, it has been a primary object to present, as far as practicable, an ample and impartial view of all such works on medicine, and its collateral branches, as have appeared in this country during the publication of the Register. We have applauded wherever it could be done with propriety, and have not omitted to express our honest disapprobation where we thought the occasion demanded it. For error in medical science is fraught with too pernicious consequences to be treated with complacency, however disagreeable to our feelings may be an opposite course of conduct.

Under the head of philosophical intelligence will be found much information interesting to the physician, the naturalist, the agriculturalist, and the general reader. This portion of the Register embraces accounts of most of our literary, scientific, and humane associations, particularly of those of the state of New-York; and notices the progress of science, manufactures, &c. in this country. We have spared neither trouble nor expense, in order to rescue from oblivion every important fact that could be procured relative to the origin, advancement, and present condition of medical learning in this state. The Register may be consulted for several biographical sketches, and will be referred to for the most ample historical account of the College of Physicians and Surgeons, under the patronage of the Honourable the Regents of the University and the Legislature of the State of New-York.

The pages of the Register, with scarcely an exception, are composed exclusively of *original* materials; and the literature and science of this country have furnished subjects in abundance to enable the Editors to preserve this feature of the work. To their numerous and respectable correspondents, both at home and abroad, they tender their acknowledgments for their various communications. In selecting this periodical journal as the means of giving publicity to their valuable productions, they have strengthened the exertions of the Editors, and given the most unequivocal approbation of their undertaking.

Had the original limits of the Register been adhered to, the matter included in the *four* volumes now completed would have occupied at least *six*. The public need no other assurance than this that pecuniary considerations have never been the objects of the projectors of this work: the Register originated in a desire to enhance the medical literature of this country; and the end to which the labours of the Editors were directed has been to augment the stock of useful knowledge.

THE EDITORS.

New-York, July, 1814.

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THE

AMERICAN MEDICAL AND PHILOSOPHICAL REGISTER.

JULY, 1813.

ORIGINAL COMMUNICATIONS.

I.

Sketch of the LIFE *and* CHARACTER *of the late* BENJAMIN RUSH, M. D. LL. D. *Professor of the Institutes and Practice of Medicine in the University of Pennsylvania, &c. &c.*

(With an Engraving, by Leney.)

WE submit, with great deference to the public, the following hasty and imperfect sketch of the life of that ornament of science and of human nature, the late illustrious Doctor Benjamin Rush. We have accompanied it with an engraving from a painting in the possession of Dr. Hosack, executed by that distinguished American artist Mr. Sully, a short time previous to the death of Doctor Rush; and in which will be seen, most accurately depicted, the lineaments of that mind which we have feebly attempted to delineate.

Benjamin Rush was born near Bristol, in the state of Pennsylvania, on the 5th of January, 1745. His ancestors belonged to the society of quakers, and were of the number of those who followed the celebrated William Penn to Penn-

sylvania, in the year 1683: his grandfather, James Rush, resided on his estate near Philadelphia, and died in the year 1727: his son, who was the father of the subject of these memoirs, inherited both his farm and his trade, which was that of a gun-smith. He died while Benjamin was yet young. His widow, a most excellent woman, upon whom the education of young Rush thus necessarily devolved, placed him, at an early age, under the direction of the late Rev. Samuel Finley, at West Nottingham, in Chester county, Pennsylvania, by whom he was taught the rudiments of classical knowledge. Dr. Finley, afterwards better known as the president of Princeton College, New-Jersey, was an able scholar and faithful teacher, and, being also related to Mrs. Rush, may be supposed to have paid great attention to the improvement of his young pupil. But whatever may have been the assiduity with which his education was directed by his preceptor, he possessed an ardent desire for knowledge, and was most unwearied in the pursuit of it.

From the academy of Dr. Finley he was removed to the college of Princeton, where he finished his classical education, and was admitted to the degree of A. B. in 1760, when he had not yet completed his sixteenth year. He was now left to choose a profession, and in the choice which he made he doubtless was actuated by conscientious motives. He seems to have fully known his own character, and to have formed a proper estimate of his talents, and by applying them to the science and practice of medicine, to have been desirous of doing all possible good to the family of mankind. That he was directed by these motives, may be inferred from his own opinion of the utility of medicine. "So great," says he, "are the blessings which mankind derive from it, that if every other argument failed to prove the administration of a providence in human affairs, the profession of medicine would be fully sufficient for that purpose."

He accordingly, soon after leaving college, placed himself under the care of the late Dr. John Redman, of Philadelphia, a gentleman who had deservedly obtained an extensive share of professional business, and who was justly considered an excellent practitioner. With Dr. Redman young Rush continued some time, zealously engaged in the acquisition of the several branches of medicine. At that day, however, no institution for the purpose of medical instruction was established in Philadelphia, and his thirst for knowledge being rather excited than gratified with what he had learned from his preceptor, he formed the resolution of going abroad in order to avail himself of those advantages which were not within his reach in this country. The university of Edinburgh, at that time, was at the zenith of its reputation, and justly boasted of its able professors, among whom were the elder Munro, the elder Gregory, Dr. Cullen, and Dr. Black. Thither Rush repaired, and was graduated M. D. in 1768, after having performed the usual collegiate duties with much honour, and published his inaugural dissertation *De Concoctione Ciborum in Ventriculo.* In this performance he candidly acknowledged himself indebted, for many of the opinions which he advanced, to his distinguished teacher Dr. Cullen.

About the period of Dr. Rush's return to his native country, the first attempt was made in Philadelphia for the organization of a medical school. Lectures on anatomy and surgery had indeed been delivered, in that city, in 1763 and 1764, to a small class of pupils, by the late Dr. William Shippen, who, two years previous, had returned from Europe, where he had completed his education under the direction of the celebrated Dr. William Hunter; and, in 1765, Dr. John Morgan, also, gave instruction on the institutes of medicine and the practice of physic. Three years after this, the venerable Dr. Kuhn, who had been a pupil of the il-

lustrious Linnæus, and had preceded Dr. Rush in his medical honours at Edinburgh only one year, was made the professor of botany and the materia medica. To this list of teachers, Dr. Rush himself was added as professor of chemistry, immediately upon his arrival from England in 1769. Such was the first organization of the medical college of Philadelphia.

That Dr. Rush had, in an eminent degree, the qualifications of a teacher, and discharged with exemplary fidelity the important duties belonging to the elevated station to which he was chosen, the popularity attending his lectures, the yearly increase in the number of his hearers, and the unexampled growth of the college with which he was connected, bear ample testimony. Shortly after this period, he was elected a fellow, and also one of the curators of the American Philosophical Society.

While Dr. Rush was thus engaged in the active pursuits of his profession, the dispute of the then American colonies with Great Britain arose. Considering the claims of the British government unjust, he entered with warmth into the defence of the rights of his countrymen. His talents were already well known, and the fullest confidence was placed in his integrity and patriotism. The crisis demanded his services; and in the year 1776 he was chosen a member of congress for the state of Pennsylvania, and, on the 4th of July, with eight other delegates from that state, he signed the instrument of independence. Upon the 11th day of April, 1777, he was appointed surgeon general of the military hospital in the middle department. His colleague in the medical school, Dr. Shippen, on the same day was appointed director general of all the military hospitals for the armies of the United States, and Dr. J. Jones was made physician general of the hospital in the middle department. The office of surgeon general was not long held by Dr. Rush:

He indeed fulfilled the duties of his appointment with all the promptitude suitable to the exigency of the times; but as he had more particularly directed his studies to the practice of physic, and deemed himself better prepared to watch over the concerns of the medical department, he gave a decided preference to a station of that kind. His wishes were soon granted, for upon the 1st of July, 1777, he was created physician general of the hospital, in the middle department, in the room of Dr. Jones.

On the 6th of February ensuing, Dr. Rush resigned the station of physician general and Dr. William Brown was appointed in his place. We shall here forbear any remarks upon Dr. Rush's resignation, nor shall we offer any conjectures as to the causes which led to it. We are certain he did not quit the public service on account of any difficulties incident to the office, or from any want of inclination to promote, by every honourable means, the cause of his country. Serious disputes had arisen among the heads of the medical staff, and there existed many heavy charges of impropriety of conduct on the part of the managers of the hospital stores, which eventually terminated in an investigation by a court of inquiry. The character of Dr. Rush remained unsullied, and being determined to remain free, even from the suspicion of mal-conduct, he totally withdrew himself from the hospital department.

Doctor Rush, however, still continued to take an active part in the politics of the state to which he belonged. The original government of Pennsylvania is known to have been perfectly unique in its form, and the constant source of incalculable mischief. The house of representatives, chosen annually by the people, and on which there was no check, was the sole legislative power; and each succeeding assembly often made it their business to undo all that their predecessors had done. This kind of government was justly

reprobated by Dr. Rush, and the necessity and wisdom of a reformation in it was too apparent not to be attempted.—Dr. Rush, and many other distinguished abettors of the cause, had soon after the satisfaction of seeing a new form of government established in Pennsylvania, by a general convention of the people.

He who has acquired a high reputation in pursuits which do not belong to his profession, is doubly obligated to establish a character as a successful cultivator of that art or science to which his primary attention may have been directed. Of this circumstance Dr. Rush was fully aware: he was already acknowledged an able teacher and practitioner of medicine; but he had also devoted a considerable portion of his time to politics and legislation, and well knowing that the science of medicine afforded ample room for the deepest researches of human intellect, and abundant opportunity for the display of the greatest talents, he formed the resolution of retiring from political life, and of devoting the remainder of his days, with increased ardour, to his profession. He was still further induced to this resolution, from the consideration of the state of medicine in his native country at that time, which, it is scarcely necessary to remark, was in a very low condition. Happy for medical science and the interests of humanity, that he so early formed such a resolution, and that he was so steady, uniform, and indefatigable in the accomplishment of it.

During the long and brilliant career of Dr. Rush's life, from this time to its termination, he may be considered as exclusively occupied in duties pertaining to his profession, and not unlike another Howard, in "surveying the mansions of sorrow and pain," and in mitigating and removing the distresses of all within his power. His biography, therefore, like that of most other scientific men, consists chiefly in a history of his professional labours. How numerous and im-

portant his services, as an author, have been, will be readily seen from a brief detail of his writings, which we shall attempt to give, as nearly as practicable, in chronological order.

The first fruits of his professional labours, as an author, was an account of the effects of the Stramonium, or thorn apple: this appeared in the year 1770, and was published in the transactions of the American Philosophical Society, vol. 1st. The same year he addressed a letter, on the usefulness of Wort in ill conditioned ulcers, to his friend Dr. Huck, of London, which was published in the Medical Observations and Inquiries of London, vol. 4th. In 1774 he read, before the Philosophical Society, his interesting Inquiry into the Natural History of Medicine among the Indians of North America, which formed the subject of an anniversary oration. He this year again addressed another letter to Dr. Huck, containing some remarks on Bilious fevers, which was printed in the London Medical Observations and Inquiries, vol. 5th. To this succeeded his account of the Influence of the Military and Political Events of the American Revolution upon the Human Body, and Observations upon the Diseases of the Military Hospitals of the United States, which his situation in the army eminently qualified him to make. In 1785 he offered to the Philosophical Society of Philadelphia an Inquiry into the Cause of the Increase of Bilious and Intermitting Fevers in Pennsylvania; published in their transactions, vol. 2d. and soon after, in quick succession, appeared Observations on Tetanus, an Inquiry into the Influence of Physical Causes upon the Moral Faculty, Remarks on the Effects of Ardent Spirits upon the Body and Mind, and his Inquiry into the Causes and Cure of the Pulmonary Consumption. About this time, also, appeared his paper entitled Information to Europeans disposed to migrate to the United States, in a letter to a

friend in Great Britain; a subject which had already occupied the attention of Dr. Franklin, but which Dr. Rush considered still further deserving notice, on account of the important changes which the United States had lately undergone. To this paper followed his Observations on the Population of Pennsylvania, Observations on Tobacco, and his Essay on the Study of the Latin and Greek Languages, which was first published in the American Museum of Philadelphia. This last mentioned paper, which has been the fertile topic of much animadversion, was, with several other essays of Dr. Rush, and his Eulogiums on Dr. Cullen and the illustrious Rittenhouse, the former delivered in 1790, the latter in 1796, embodied in an octavo volume, entitled Essays, Literary, Moral, and Philosophical, and published in 1798.

In 1791, the Medical Colleges of Philadelphia, which, on account of certain legislative proceedings, had existed as two distinct establishments since the year 1788, became united under the name of the University of Pennsylvania; and Dr. Rush was appointed to the chair of the professorship of the institutes of medicine and clinical practice. He now gave to the public his Lectures upon the Cause of Animal Life. The same year he presented the Philosophical Society his Account of the Sugar Maple Tree of the United States, which was published in their transactions, volume 3d; and in 1792, Observations, intended to favour a supposition that the Black Colour of the Negro is derived from Leprosy; published in their Transactions, volume 4th.

The year 1793 is memorable in the medical annals of the United States, from the great mortality occasioned by the yellow fever, which prevailed in the city of Philadelphia, and the history of that epidemic, which was published by Dr. Rush in 1794, cannot be too highly valued, both on account

of his minute and accurate description of the disease, and the many important facts he has recorded in relation to it. It was comprised in one volume octavo, and has undergone several editions, and been extensively circulated in the Spanish and in the French language. About this period, also, he offered to the medical world his observations on the Symptoms and Cure of Dropsy in general, and on Hydrocephalus Internus; an Account of the Influenza, as it appeared in Philadelphia in 1789, 1790, and 1791; and Observations on the State of the Body and Mind in Old Age. In 1797 came out his Observations on the Nature and Cure of Gout, and on Hydrophobia; an Inquiry into the Cause and Cure of the Cholera Infantum; Observations on Cynanche Trachealis, &c.

It is proper to state, as connected with the literary labours of Dr. Rush, that in 1788, many of his medical papers were collected together, and that he offered them to the public under the title of Medical Inquiries and Observations, volume first. These he from time to time continued, embracing most of the writings above enumerated, besides observations on the climate of Pennsylvania, and some others, until a fifth volume was completed in 1798. In 1801 he added to his character as a writer, by the publication of six Introductory Lectures to a course of Lectures upon the Institutes and Practice of Medicine, delivered in the University of Pennsylvania. In 1804 a new and corrected edition of his Medical Inquiries, &c. was printed in four volumes, octavo. In 1806 he also published a second edition of his Essays. In 1809, such was the demand for the Medical Inquiries and Observations, he again revised and enlarged the work throughout, and enriched the medical profession with a third edition. In this edition he continued his several histories of the yellow fever, as it prevailed in Philadelphia from 1793 to 1809. It also contained a Defence of

Blood-letting, as a Remedy for certain Diseases; a view of the comparative state of Medicine in Philadelphia between the years 1760 and 1766, and the year 1809; an Inquiry into the various sources of the usual forms of Summer and Autumnal Diseases in the United States, and the means of preventing them; and the recantation of his opinion of the Contagious nature of the Yellow Fever.

He now formed the idea of selecting some of the best practical works for republication in America, and in order to render them more useful, of adding to them such notes as might the better adapt them to the diseases of his own country. His editions of Sydenham and of Cleghorn were published in 1809, and in 1810 appeared those of Pringle and Hillary. In 1811 appeared a volume of Introductory Lectures, containing those he had formerly published, with ten others delivered at different years before his class, and also two upon the pleasures of the senses and of the mind. His work upon the Diseases of the Mind, which had long and ardently been looked for, was next added to his writings. It appeared towards the close of 1812, in one volume octavo. The last effort of his pen was a letter on Hydrophobia, containing additional reasons in support of the theory he had formerly advanced, as to the seat of the disease being chiefly in the blood-vessels. It was addressed to Dr. Hosack, and written not many days before his fatal illness.

While thus assiduously engaged in enriching medical science with the valuable fruits of his long and extensive experience, and in the active discharge of the practical duties of his profession, he was, on the evening of the 13th of April, seized with symptoms of general febrile irritation, which were soon accompanied with considerable pain in his chest. His constitution was naturally delicate, and he had acquired, from previous illness, a predisposition to an affection of his lungs. He lost a moderate quantity of blood, by which he

felt himself considerably relieved. But his strength was not sufficient to overcome the severity of his complaint: the beneficial effects resulting from the most skilful treatment were but of temporary duration. His disease rapidly assumed a typhus character, attended with great stupor and a disinclination to conversation. In other respects, however, he retained his faculties, and the perfect consciousness of his approaching dissolution. On Monday evening ensuing, after a short illness of five days, and in the 69th year of his age, he ended his truly valuable and exemplary life. His death was the subject of universal lamentation, and he was followed to the grave by thousands, who assembled to bear testimony to his excellence.

In January, 1776, he married Miss Julia Stockton, daughter of the Hon. Judge Stockton, of New-Jersey, a lady of an excellent understanding, and whose amiable disposition and cultivated mind eminently qualified her as the companion of Dr. Rush. Thirteen children were the fruits of their marriage, nine of whom still survive. Two of these are chosen to offices of high respectability in the general government of the United States.

It were no easy task to do adequate justice to the great talents, the useful labours, and the exemplary character of Dr. Rush. From the preceding sketch, it is presumed, some idea may be formed of his incessant devotedness to the improvement of that profession of which he was so bright an ornament. His merits, as a practitioner, are too well known to need particular notice: he was fully aware of the great responsibility attached to the medical character, and uniformly evinced the deepest solicitude for the recovery of his patient. His kindness and liberality in imparting aid to those from whom no remuneration was ever to be expected was unbounded, and arose from the generous impulse of his nature, the cordial concern he felt in whatever affected the

interests of his fellow creatures. His mind was of a superior order: to a perception naturally ready and acute, he united a discriminating judgment, a retentive memory, which was greatly improved by habits of close attention, a brilliant imagination, and a highly cultivated taste. He possessed a comprehensive understanding; his knowledge was varied and profound, and he eminently excelled in the several departments of his profession. In his assiduity and perseverance in the acquisition of knowledge he had no superior, and few equals. Accustomed to constant and regular exercise, his intellectual powers acquired additional vigour from employment. Notwithstanding the great fatigue he had to undergo in the discharge of the practical duties of a laborious profession, and the constant interruptions to which he was exposed, when engaged in his pursuits as an author, he never for a moment abated of his ardour in the cause of science. His habits of punctuality to every kind of business in which he was employed, added to a judicious arrangement of time for his multifarious occupations, secured to him sufficient leisure for the publication of those works which have given such celebrity to his name.

His writings claim our attention, both on account of their extent and their variety. Instead of being a mere collator of the opinions of others, he was constantly making discoveries and improvements of his own, and from the results of his individual experience and observation, added more facts to the science of medicine, than all who had preceded him in his native country. His description of diseases, for minuteness and accuracy of detail, cannot be exceeded, and may safely be regarded as models of their kind. In the treatment of gout, dropsy, consumption of the lungs, and the diseases of old age, he enlarged our views of the animal economy, and threw more light upon the peculiar character of these afflicting disorders, than is to be derived from the

investigations of any other writer. His volume on the diseases of the mind, in as far as it exhibits the infinitely varied forms which those diseases exhibit, is a storehouse of instruction. Had his labours been limited to these subjects alone, his character would deservedly have been cherished by future ages. His reputation, however, will permanently depend upon his several histories of the epidemics of the United States, which have rendered his name familiar wherever medical science is cultivated, and will hereafter cause to be inscribed upon the same imperishable column that bears testimony to the merits of Sydenham and Boerhaave, the illustrious name of BENJAMIN RUSH. The respect and consideration which his publications procured for him among his contemporaries, was such, that the highest honours were accumulated upon him in different parts of Europe, as well as in his own country, and he was admitted a member of many of the most distinguished literary and philosophical associations.

There are other qualities which still more entitled Dr. Rush to our respect and esteem. In private life, his disposition and deportment were in the highest degree exemplary. Admired and courted for his intellectual endowments, he riveted to him the affections of all who enjoyed the pleasure of an intimate acquaintance. The affability of his manners, the amiableness of his temper, and the benevolence of his character, were ever conspicuous. He was ardent in his friendships and forgiving in his resentments, and yet entertaining a due regard for himself and a high sense of honour, he possessed a manly independence of spirit which disdained every thing mean and servile. He had an extraordinary command of language, and always imparted his thoughts in a peculiarly impressive and eloquent manner. Those who had the happiness to experience the delights of his conversation, will long recollect, with pleasure, his unassuming modesty,

and the rich stores of knowledge he poured forth on the most instructive topics. Even when his opinions were solicited, they were given, not as the dictates or admonitions of a superior, but as the kind advice of a friend and equal. He never evinced any of that haughtiness and affectation of importance, which sometimes attaches to men of eminence, and which so materially lessens the pleasures and comforts of social life.

He was a believer in christianity from an examination of its principles and the deepest conviction. The purity of its doctrines and the excellence of its precepts was a frequent topic of his conversation: its practical influence upon his conduct through life he often acknowledged, and cherished with a fervent hope the animating prospects it affords. His writings, in numerous places, bear testimony to his christian virtues; and in a manuscript letter, written a short time previous to his fatal illness, and now before the writer of this imperfect sketch, he candidly declares that he had "acquired and received nothing from the world which he so highly prized as the religious principles he received from his parents." It is peculiarly gratifying to observe a man so distinguished in a profession in which, by the illiberal, religious scepticism is supposed to abound, directing his talents to the maintenance of genuine piety, and the enforcing of christian virtue. To inculcate those principles which flow from the source of all truth and purity, and to impart them as a legacy to his children, was an object dear to his heart, and which he never failed to promote by constant exhortation and the powerful influence of his own example.

There is one particular circumstance in the character of Dr. Rush, which we cannot permit to be passed over without observation: we allude to the union, so eminently conspicuous in him, of the eminent practitioner, and the able and voluminous writer. We know that doubts have been studiously

inculcated, as to the practicability of such union; we apprehend with very little regard either to reflection or observation. For ourselves, we would scarcely have believed that these doubts could ever have arisen from any other source than ignorance and indolence, had we not, at times, heard them suggested by men who lay claim to some notice in their profession. Is it not obvious that he only is competent to describe, with discriminating accuracy, the history of disease, who had been an eye-witness to what he relates, and that a faithful exhibition of the infinitely varied form, the minute changes and terminations of morbid action, the operation of remedies and their effects, must come from him alone who is practicably conversant with the bedside of the sick. But let us appeal to the stronger evidence of facts: From whom has medical science received its chief contributions, and who are the great writers in medicine? Among the many who might be enumerated we will mention Sydenham, Boerhaave, Hoffman, Mead, Pringle, the Hunters, Pott, Cullen, Bell, Heberden, Fordyce; and Munro, Duncan, Gregory, Baillie, Blane, and Chisholm. Is the youngest tyro in the profession ignorant that these distinguished writers are among the most eminent practitioners of their day?

We sincerely hope and believe that the ingenuous youth of our country, who enter upon the study of medicine, will never be influenced by the opinions of those who maintain that he whose mind is stored with various learning is, on that account, the less qualified to discharge the duties of an able physician; nor, we trust, can they respect the wisdom of those who would depreciate the character of that practioner, who, while in the exercise of his professional skill, endeavours still further to render himself useful to the world by communicating the results of his own experience and observation. Such views of the profession of medicine, we are confident, can occur to those only whose intellects are render-

ed torpid by sloth or indifference, or whose minds have become so sordid as to be exclusively actuated by the love of gain. Let our youth, then, be excited by the powerful example of Doctor Rush, to form an exalted opinion of the dignity and usefulness of the profession, and let them support that dignity and exemplify that usefulness by the same active exertions in the cause of science and humanity, that have characterized this able and learned physician.

II.

Remarks upon the HYDROPHOBIA, *in a letter to Dr.* DAVID HOSACK, *of New-York, from* BENJAMIN RUSH, M. D. *Professor of Medicine in the University of Pennsylvania. Dated,*

Philadelphia, March 15, 1813.

DEAR SIR,

In the fourth volume of my Medical Inquiries and Observations I have endeavoured to prove, that the disease produced by the bite of rabid animals is a state of fever, seated chiefly in the blood-vessels, but extended, in a certain degree, in common with several other states of fever, to the nervous and muscular systems. In the course of the last winter I received a pamphlet from Dr. Schoolbred, a British physician in Calcutta, containing an account of four cases of hydrophobia, the histories and cures of which favour the opinion I have published of the nature of that disease, and of the remedies that are calculated to cure it. The first of these cures was performed by Mr. F. Tymon, the second by Dr. Schoolbred, and the other two by Dr. Alexander Berry.

The symptoms of the disease, as described by the two former gentlemen, strongly marked its febrile nature. They were chilliness, a warm skin, a pulse beating from 104 to 110 strokes in a minute, eyes and face suffused with blood, head-ach, and, occasionally, delirium.

The remedies employed by them were,

1. Bleeding to fainting, or until the pulse was scarcely perceptible. The effects of this remedy were, an ability to swallow liquids; bilious discharges from the bowels; a reduction of the frequency of the pulse; a sense of heat, and a desire to be fanned; and lastly, sleep, a relief seldom or never experienced in this disease. The blood drawn in the case described by Dr. Schoolbred, was of a scarlet colour, and such as marks the second grade of malignant fevers.

2. Immediately after bleeding, calomel and opium were given in large quantities; the latter in tincture by way of clyster, and by the mouth, in the form of pills. A blister was applied to the forehead in one of the cases with advantage.

The two cases of cures performed by Dr. Berry were of a milder nature. They yielded to purges, injections, mercury and blisters, without the aid of blood-letting. I know it is common not to admit any case of disease, from the bite of a rabid animal, to be hydrophobia, unless all the symptoms recorded in books attend it. We do not reason in this manner in other febrile diseases. We admit of different degrees of violence and danger in the plague, in the bilious fever, and in the small pox. Why should we not admit them in the fever which has received the name of Hydrophobia?

Upon the two cures performed by Mr. Tymon and Dr. Schoolbred, I shall now make a few remarks.

Pathologists have described what they call a soap bubble pulse, that is, a pulse possessing a transient vigour, and such as seldom requires much bleeding to reduce it. There is in like manner a soap bubble state of fever, apparently violent in its first stage, but which soon passes into the prostrate, typhus, or gangrenous states of fever. The bilious fever in the southern states, we are told, frequently exhibits this transition from an active to a feeble state of the arterial system. This soap bubble form of disease appears likewise in

madness when it occurs in hard drinkers. After one or two bleedings, which are called for by the pulse, the system sinks into a prostrate state, and unless it be restored by prompt and liberal doses of opium, volatile alkali, and in some cases by ardent spirits, the disease sometimes terminates in death. Now, the hydrophobia appears to be a fever of this kind.—No sooner is the soap bubble form of the disease reduced by bleeding, than the system sinks as it does after bleeding for drunken madness, and calls for the immediate exhibition of all the remedies commonly employed in the prostrate, typhus, and gangrenous states of fever. The loss of blood in Dr. Schoolbred's patient was but forty ounces; in Mr. Tymon's a less quantity. But there may be cases in which the disease may come on with such symptoms of prostration, as to forbid bleeding altogether, and to require the immediate exhibition of the most cordial and stimulating remedies.—Again, there may be cases, that will yield to depletion by purging and sweating only, and in which bleeding may be hurtful. There may be cases in which bleeding may be forbidden in the beginning, and called for in the close of the disease; and lastly, there may be cases in which the symptoms may require the loss of the same quantity of blood that is required to cure an inflammatory pleurisy or yellow fever. Exactly the same variety in the symptoms and in the order of their appearance, also in the indications of cure, occur in fevers from nearly all their causes. But why have I supposed such cases of Hydrophobia to be possible? They are to be met with in books, and it is only where the remedies have been accurately and promptly accommodated to the state of the system in each of them, that a cure, either by accident or design, has ever been performed of that disease.*

* Mr. Nicholas Nancrede, student of medicine in our university, has lately fa-

In favour of the practice I have recommended for the cure of hydrophobia, let us recollect the different issue of the treatment of the small pox and gout since they have been brought under the dominion of the unity of fever, compared with their issue while they were considered as specific diseases. Ages passed away in fruitless attempts to discover remedies that should destroy by mixture, or expel from the system, the poison of the small pox. It was by boldly renouncing them all, and treating that disease as a state of fever, by bleeding and cool air, or by cordial remedies, according to the state of the system, that Dr. Sydenham obtained a partial victory over it. Paroxysms of the gout have in like manner been relieved and cured by rejecting the use of remedies which have been supposed to destroy a specific acrimony, or a specific morbid action, and by exhibiting the common remedies for fever, suited to its different grades and seats. To expect a cure for hydrophobia by any other means, is to renounce not only reason, but all experience in medicine.

I shall conclude my letter by mentioning, that several cases have lately occurred under my notice, or within my knowledge, in which there was good reason to believe, from circumstances, that the excision of the part many days, and in one instance six weeks after the wound was inflicted by a rabid animal, prevented the disease. When patients object to this radical preventive, or to the application of a caustic, perhaps moderate depletion by bleeding, purging and sweating medicines, and low diet, would have the same effect in

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voured the author with a sight of a copy of a dissection of a patient that died of hydrophobia in Paris, in whom marks of considerable inflammation were discovered in the upper part of the medulla spinalis. It is possible disease in that part may be the cause of the difficulty in swallowing liquids, and of the spasmodic affection of the larynx. The above dissection suggests the propriety of drawing blood by cups from the upper part of the spine, or of applying stimulating liniments, blisters, or caustics to it, according to the state of the system.

mitigating the disease, or preventing it altogether, that they have in lessening the violence of the small pox, or preventing an attack of the yellow fever. Cases of the success of the first three of those remedies in seven persons bitten by a mad dog, have been transmitted to us from the high and respectable authority of Dr. Hillary, in his Observations upon the diseases of Barbadoes.*

From, Dear Sir,

yours truly, and very respectfully,

BENJAMIN RUSH.

Dr. Hosack.

III.

Account of the Epidemic Pneumonia, *which lately prevailed at Albany, and at other parts in the state of New-York, in a letter to* John W. Francis, M. D. *Fellow of the College of Physicians and Surgeons, New-York, &c. from* James Low, M. D. *Member of the Society for the Promotion of Useful Arts in the State of New-York, &c. Dated, Albany, June 1st,* 1813.

The public attention has been much excited, and considerable alarm been produced, by the epidemic which has, for some months, prevailed in this state; first on the northern and western frontiers, and chiefly confined to the army; but gradually extending, and pervading nearly every part of it. Of this epidemic, which has proved a scourge to the soldier and the citizen, I propose giving a brief historical account, as I have seen it myself, and as numbers of my pro-

* Those persons took at the same time musk, cinnabar and camphor, but from their inefficacy in similar cases, when used alone, no benefit can be ascribed to them.

fessional friends have observed it, without any bias, from previous communications on the subject, or any regard to theory, further than facts will warrant.

TIME OF ITS APPEARANCE.

Though the first case I saw of the complaint was about the 12th of October, I was informed that several had occurred as early as September, in the camp at Green Bush, where my patient then was; yet not in such numbers as to excite any alarm, or raise a suspicion that the disease was either epidemic or malignant. The number of cases gradually increased, in the camp and in its neighbourhood, during the latter part of October and beginning of November, about the middle of which the disease appeared in this city; first among some labouring persons who had been employed at the camp, and where some of them were taken ill, and then among the ferrymen plying between the two places. From this time it appeared indiscriminately among all ranks of people, and in every part of the city.

NOSOLOGICAL ARRANGEMENT.

Of *names* I am not particularly tenacious, but choose to rank it with Cullen, under the genus "Pneumonia," species second, "Peripnumoniæ Idiopathicæ complicatæ febre," where we have the varieties,

Peripneumonia Putrida, S.
Peripneumonia Ardens, S.
Peripneumonia Maligna, S.
Peripneumonia Typhodes, S.

Of these Cullen observes in a note, "Sauvagesum, ut soleo, secutus, hanc et tres sequentes species quasi diversas recensui, *cum tamen pro una eademque habere vellem.*" His objection to Sauvages appears just, as there can be no question, that the term Peripnumoniæ Typhodes, will include the

other three; I therefore prefer it. I adopt this arrangement with the more satisfaction, as under the one or the other of the above names, I find the disease accurately described by a variety of authors. In adopting a name, I do not adopt a theory; and as names are intended merely to distinguish one thing from another, they ought not to be needlessly multiplied.

HISTORY OF THE DISEASE.

In giving the history of any disease, it is not to be presumed that the symptoms all occur in any individual case, and much less so, in one so multiform in this respect as the present.

The complaint always begins, as in other peripneumonies, with a chill, but infinitely more severe and distressing, and of much longer continuance; very great prostration of strength, countenance generally sunk, though sometimes a little flushed; the pulse feeble, in frequency sometimes natural, at other times slower, but generally otherwise. As the chill and horror go off, the patient generally complains of universal distress, pain in the head, back, and extremities, but particularly in one or the other side, shooting up to the clavicle or across the chest, often to different parts, as the neck and opposite scapula: the pulse is now generally, though not always, increased in frequency, apparently full and strong, but annihilated by the slightest pressure; indeed, it has the "semblance of strength without its reality." This peculiarity of the pulse may almost be considered as the diagnostic in the complaint.

The tongue is, in almost every case, covered with a *white velvet like* thick fur, which soon becomes brown or black; sometimes, however, it is pale and *moist*, often *dry* and harsh; the breathing insupportably laborious, even when the pain is not severe, and every muscle concerned in this function

ceases to act, until goaded on by volition; but when the pain is acute, the anguish is inexpressible; every cell in the lungs seems infarcted, and themselves weighed down by the load.

The bowels are generally costive, and the stomach oppressed with a thick, glairy, tenacious matter, resembling the albumen ovi; the urine high coloured, and in small quantity; the stools vary in appearance, according to the cathartic administered, being always of a lighter colour, when procured by the alkaline salts, than when metallic one shave been used. The skin is, for the most part, dry and hot, often nearly natural, but in all cases perspiration is easily excited. The cough is extremely urgent, the expectoration generally free, but in some cases difficult; the expectorated matter has a glairy, ichorous appearance, somewhat resembling thin soft soap, and is often streaked with blood. Nausea and a portion of bile sometimes attend the attack, though I have not found it a common symptom: it is worthy o fnotice that the glairy fluid discharged from the stomach, is often extremely nauseous and fetid, and highly disgusting to the patient himself, as well as to the by-standers. This was, also, the case with the expectorated matter in many instances.

Great restlessness, distressing dreams, sudden frights, and starting from sleep, attend most cases, and many are unable to endure the horizontal posture, from a sense of suffocation, which constantly attends that position. Coma, and sometimes delirium ferox, are frequent symptoms. Petechiæ, though not common, occur in some of the more malignant cases. In many instances a numbness in the left arm, (for I have not observed it in the right) approaching paralysis, occurs, which frequently continues for weeks after the patient is convalescent. Apthæ and ulcers in the throat occur in a number of cases. The disease, though generally under the controul of medicine, is in some instance highly malignant, and proves

fatal before the operation of any medicine can be produced. Indeed, I have known one instance in which the patient died during the rigor with which she was attacked; she was, however, upwards of eighty years of age: I am not acquainted with an instance of a person over seventy years of age recovering from an attack. Instances of children and infants being subjects of it, have been mentioned to me; but I have met with none under the age of nine years; and Dr. White, of Cherry-Valley, told me in February last, that he had not seen an instance under the age of twelve years. It is, however, possible and probable: I speak of it only as I have seen it.

These are the symptoms which I have observed in the cases that have come under my observation, since the first appearance of the complaint, in October last; not that I have seen them all in any single patient, for there are unusual and doubtful symptoms in every disease; but all those symptoms which point to the *lungs* as the seat of the disease, as pain in the side, laborious breathing, urgent cough, with or without bloody expectoration, inability to lay in a horizontal position, the infarction of the lungs, &c. and all those symptoms which obviously point out the fever which accompanies it, to be real typhus, as the pulse, the skin, the tongue, coma, delirium, sudden prostration of strength, and petechiæ, the latter excepted, I have seldom found absent in any case, which I have considered as belonging to the epidemic. It must, however, be observed, that many cases of typhus have occurred during the prevalence of the epidemic, unattended by any pneumonic symptoms, and many, I believe, have placed these also, under the wide-mouthed name of *epidemic*. I also know, that simple catarrhal fever has had the same honour. It is, therefore, no wonder that so many different accounts of this disease have appeared, when so little discrimination has been made.

Theorists may wonder, and laugh if they please, at the strange combination of *typhus* with pneumonic inflammation; but wonder, says a learned writer, is ignorance, and laughter folly; for such is the fact, supported on no less authority than that of the learned and accurate Sydenham. In his chapter on "The Epidemic Cough, Pleurisy, and Peripneumony, of 1675," he observes, "And though the pungent pain in the side, the difficulty of breathing, the colour of the blood that was taken away, and the rest of the symptoms that are usual in a pleurisy, seemed to intimate that it was an essential pleurisy; yet this disease required no other method of cure than that which agreed with the fever of this constitution, (continued fever, with dysentery) and did no ways admit of that which was proper in the *true pleurisy*, as will hereafter appear. *Add to this*, that when a true pleurisy is the original disease, it usually arises betwixt spring and summer; whereas the distemper we now treat of, begun at a very different time, and is only to be reckoned a symptom of the fever which was peculiar to the current year, and the effect of the accidental cough."

On the authority of Dr. Parr, also high authority, we assert the same fact; he observes, Art. Pneumonia, "the putrid peripneumony proves often a very formidable epidemic, *and its nature is that of typhus*, with which the peripneumony is accidentally combined;" but we assert it, moveover, on the authority of our own observation of the fever, and the numerous dissections which have been made in different places by accomplished surgeons showing the lungs or pleura, or both, to have been highly inflamed.

Perhaps it would be more scientific, agreeably to the two authorities above cited, to name the disease, the Typhus Pneumonodes, as they both conceive the pneumonic affection as accidental; yet Parr has preserved the old name. In practice I conceive it immaterial.

There is, in the combination of the more important symptoms attending this disease, great differences, not only in the manner of their appearance, but in their degree of violence and malignity; hence, in some, the pyrexial symptoms require all our attention, in others the pneumonic; though ordinarily they both equally demand it.

The disease has, in some instances, terminated by metastasis; in others by the supervention of another complaint, as scarlatina, measles, and an anomalous rash, all of which prevailed to a certain degree at the same time, and this I find to have been the case in other countries where the same epidemic has raged.

In fine, there has been as great a variety in the symptoms of the cases I have seen in this place during the winter, as there are discordancies in the different authors who have described it as prevailing in the various parts of the globe.

Thus the disease is described, by various authors in nearly the same language, differing only in the predominance of a particular symptom, which often depends on the peculiar constitution of the patient, his age, mode of life, and the constitution of the atmosphere as well as nature of the climate where the epidemic has raged.

Sydenham, in the chapter formerly cited, notices a malignant pleurisy, and a symptomatic one, that accompanied the fever which prevailed in the winter of 1675, when he observes, that the pleurisy was combined with a continued fever, which would not bear bleeding; and though he does not enumerate in order all the symptoms of the complaint, yet from the scope of the whole chapter, it is easy to perceive that he has described essentially the epidemic which has prevailed in this place. I cannot help observing that the epidemic constitution of the year bears a close analogy to that which I have observed here, and in the neighbourhood,

during the last summer and fall; as dysenteries were more prevalent than they had been for many years.

Cleghorn, in his Diseases of Minorca, chap. pleurisy, has described the disease under a different epidemic constitution, and different climate, and yet exactly as it has appeared in some parts of this country. I believe every one will recognize the complaint from the following history of it, in his own words. "Those pleurisies began commonly like an ague fit, with shivering and shaking, flying pains all over the body, bilious vomitings and purgings, which were soon succeeded by quick breathing, immoderate thirst, inward heat, headach, and other feverish symptoms. In a few hours the respiration became more difficult and laborious; the most part of the sick being seized with stitches in their sides, striking upwards to the clavicle and shoulder blade; obliquely downwards along the cartilages of the bastard ribs; or else darting across from the breast bone to the vertebræ of the back; so that they could neither cough nor make a full inspiration without great pain. Many complained chiefly of a load and oppression in their breast, as if a millstone had been laid upon it; some of a heaviness and fluttering about the heart, which at one time seemed to glow with extraordinary heat, at another to be chilled with cold, as if it had been dipt in ice-water. In a few of the sick those complaints preceded the fever, in others they did not come on till the day after.

"In the progress of the disease, it was not uncommon for the pains to move about in the thorax from one place to another. Sometimes they would shift from the breast to the limbs, and of a sudden return to the bowels; and I have seen cases wherein, after leaving one side, they have attacked the other unexpectedly, and proved fatal in a very short time. The left side of the thorax was not near so liable to be affected as the other; forty-two out of sixty patients

who were seized about the same time, having had the disease in the right.

"But whichsoever side was affected, the sick lay easiest on the opposite, though the generality were obliged to lie upon their backs, or to sit up in bed with their heads erect. Many were drowsy and inclinable to sleep; but they raved at intervals, or were much disturbed with extravagant dreams." &c. &c. He goes on: "In the mean time the external heat of the body was in several very moderate; in some, less than natural; but for the most part it was so intense as to raise the mercury in Fahrenheit's thermometer, to the 102d degree; and often in the afternoon to the 104th. The pulse was likewise very variable, not only in different persons, but in the same person at different times; and in respect to its strength in different arms, that of the pained side being most obscure; and I have frequently found it like that of a man in health, or even slower than natural, while the patient was in the greatest danger, so that it could neither be depended upon as a prognostic sign, nor as an indication of cure." He states the fallacy of the appearances of the blood, and his inability to say what appearance of it afforded the best or worst prognostic. He continues:

"Beside some abatement of the fever, which commonly happened every morning, it was remarkable that upon the third day, or beginning of the fourth, there was frequently a great remission, sometimes a total cessation of every violent symptom; so that the sick were thought to be out of danger: but on the fourth or fifth a dilirium suddenly came on, or the breathing became more difficult than ever, and one or both of those symptoms increasing hourly, the patient expired in a day or two, either suffocated or raving mad." I have made this long extract in order to show how very nearly the epidemic here and that in Minorca quadrate; excepting the latter being attended with greater bilious symp-

toms, and its bearing the loss of blood to a greater extent, it would serve as an accurate history of the former. And unless we are to doubt the most respectable authority, it has completely resembled it on our frontiers, where the lancet has been used freely. Dr. Rush remarks in a note on the above cited history, "It is evident from the state of the skin, the pulse, and the blood, that this pleurisy partook a good deal of a malignant nature."

Morgagni, in his twenty-first letter, describes two epidemics, the one at Bologna, the other at Padua, which from the short and desultory histories he has given of them, in his dissections, appear to be of the same nature with our own; and Coiterus, in his anatomical observations, says, "that in the year 1563 peripneumonies and *malignant* pleurisies spread all over Italy, like epidemical diseases, and destroyed great numbers; and in the bodies that I dissected, (says he) I found the lungs, as it were, universally turgid, with blood half putrified, and indurated to a surprising degree." Wierus, in lib. rarar. observat. describes a disease which he terms a malignant or pestilential peripneumony, "quæ per totam inferiorem Germaniam gravissime dominabatur, nec venæsectione aliisque remediis cedens, maximam hominum stragem ediderit," and in all its important characters resembling our own epidemic.

Huxham no doubt refers to the same complaint, when in his chapter on pluerisies, he speaks of those which do not bear the loss of much blood, and concludes by advising us in practice, to consider not only the peculiar nature of the epidemic, but also the season, and constitution of the patients. Home, in his Principia, briefly characterizes it, "Adest difficilis respiratio; inquietudo; summa debilitas; animi ad minimum motum deliquium; dolores per totum corpus; pulsus mollis et depressus; profusi sudores; rejectio materiæ tenuis, saniosæ, sanguiniæ, male olentis per sputum;

urina ruberrima; sanguis dissolutus, lividus, sine crusta alba: Eruptiones rubræ vel lividæ petechiæ.

It is probable that the disease described by Dr. Williamson in the second volume of the Medical Repository is the same; but his account is so short and imperfect that it is difficult to decide with certainty as to its real character; there is however a great similarity in the mode of treatment. Dr. Powell, of Burlington, Ver. in a letter to Dr. North, unquestionably describes the disease, and under that form it has appeared in the western part of this county, and in the countries adjoining it to the west, and where it has doubtless been more malignant than in the city. See North on Spotted Fever, page 38.

McBride also takes notice of this disease: speaking of peripneumony, he observes "but when these inflammations take place in constitutions where the crassis of the blood has been previously injured by a putrefactive acrimony; or when they are complicated with fevers, occasioned by infectious miasmata, such as have been formerly described, then the symptoms of extreme weakness and dejection, sickness, vomiting, petechiæ and delirium, will be found superadded to the pain in the chest, cough, oppression, and difficulty of breathing."

In prisons, hospitals, or transport ships, where infectious putrid fevers prevail, it is not uncommon to meet with these malignant peripneumonies, as the reader will see in Huxham's Essay on Fevers. They have also been found to rage epidemically in certain seasons in different countries of Europe; and appear to be occasioned by a most corrosive species of acrimony settling on the lungs, which in a short time produces a gangrene, not conquerable either by nature or art.

From what has been said above of this epidemic, it will be seen that Dr. Hosack, in his letter to Dr. Beck, which is

already before the public,* has briefly, but accurately, described it, as it then appeared in Albany, and as it has since manifested itself in various other places; and the mode of treatment then recommended by him is that which, with little variation, we have pursued, from its first appearance, most successfully.

For further particulars as to the existence and similarity of the diseases above mentioned, to the epidemic which has prevailed in this place, Tissot, Cappel, and Sauvages, who have brought together most of the information at that time existing on the subject, may be consulted.

CAUSE.

The causes of this disease are probably the same as those of typhus gravior and pneumonia, along with a peculiar constitution of the atmosphere, apparently beyond the reach of our investigation. The exciting causes appear to be fatigue, exposure to cold and damp air, and excess of every kind.

As far as I have observed, no class of persons are exempt from it; it attacks equally the opulent and the indigent, the temperate and the intemperate; but proves much more fatal to the poor and intemperate, frequently from the want of necessaries to the one, and the exhausted constitution of the other.

PROGNOSIS.

This is often extremely difficult; for frequently when the pain in the side has subsided, the cough and expectoration abated, and the febrile symptoms nearly disappeared, and we are ready to pronounce the patient convalescent, the pain suddenly attacks the opposite side, with more aggravated cough and copious expectoration, and a recurrence of all

* See the Register, vol. iii. p. 448.

the dreadful symptoms of typhus, which generally soon terminate in death. In general, however, a gradual subsidence of the pain and cough, with a free expectoration, and increasing freedom in breathing, regular state of the bowels, moist skin, and clean tongue, indicate a favourable termination of the complaint. On the other hand, when the pain does not abate, or increases, and the cough continues urgent, and the expectoration difficult, the breathing laborious and painful, the oppression increased when the bowels are swelled and torpid, great restlessness, delirium, aphthæ, or petechiæ appear, little hopes can be entertained of a fortunate issue of the disease.

I have said nothing of the diagnostics of this complaint; they are readily derived from the history of the disease, and will in almost every instance be found the same as in typhus gravior or pneumonia, of which two diseases this is a compound.

METHOD OF TREATMENT.

Aware of the nature of this disorder, I have from the very commencement treated it on a uniform principle, but have been in several instances obliged to vary the means. The first case I saw, was J. R. aged about forty-three. He informed me that the day previous to the attack he had been intoxicated; after which he was seized with a severe chill which lasted for at least twelve hours, during which time the pain in the left side, and a most distressing cough, with very laborious breathing, came on; great nausea and constipation of the bowels, the tongue covered with a dark brown fur, the skin dry and hot, the pulse about seventy-five, full, but easily compressed; the urine in small quantity, fœtid, and high coloured, and great prostration of strength. I ordered him a cathartic composed of the super-tartrite of potash and jalap, which operated freely, and left him much exhausted.

I then ordered him diaphoretic powders, composed of nitrate of potash, calomel, and tartrite of antimony, with balm tea, which, in the course of three or four days, completely relieved the febrile symptoms; for the cough he took the common pectoral mixture, composed of mucilage and a solution of tartrite of antimony, without any opium. On the morning of the fifth day he was completely convalescent, and, contrary to the most serious injunctions, sat up the whole day. About 7 o'clock, P. M. he was again seized with all the above-mentioned symptoms, in a much greater degree than before, together with the most outrageous delirium. One of the young men attending at the hospital in the camp bled him in my absence, and he died raving mad in the morning. Dr. Beck and my brother attended the *dissection*, as I was prevented by indisposition: the lungs were in a high state of inflammation, adhesions in different places between the lungs and pleura; a very considerable effusion, both in the cavity of the thorax and pericardium.—The diaphragm was somewhat inflamed, the liver natural, the spleen turgid, and the intestines surcharged with fœtid, dark coloured fœces.

From the effect of bleeding, in this case, as well as from my previous opinion of the nature of the complaint, I was satisfied that it would not bear depletion. This I mentioned to my friends, Doctors Eights, Wendell and Beck, three physicians with whom I have conferred weekly, during the whole period of the epidemic.

The indications of cure are, obviously,

1st. To remove the fever, and

2d. To palliate and counteract pneumonic inflammation.

The first of these indications I have accomplished by clearing the primæ viæ, by cathartics and emetics, and by diaphoretics. On the first appearance of the complaint, I administered cathartics of calomel and jalap, and super-tartrite of

potash and jalap; but from the severity of their operation, and the extreme debility which they induced, I was led to substitute the sulphate of magnesia, which operates with equal certainty and efficacy, without the exhaustion of strength which invariably followed the use of the former medicines. The cathartic I have repeated, till the bowels were soft, and the discharges natural, which generally happens from the second or third dose; though in some cases it is necessary to repeat them oftener. In some cases there is a very considerable degree of torpor of the bowels, but for the most part I have found them easily moved. When the stomach is deranged, and great nausea exists, it frequently happens that the cathartic operates freely as an emetic; when this is not the case, I have given a scruple of ipecacuanha, and one or two grains of the tartrite of antimony, which effectually discharges the contents of the stomach, and which, in eight cases out of ten that I have seen, was of that glairy ichorous, fœtid mucus, as described in the history of this disease. Occasionally, bile was evacuated, but in so small a proportion of cases, as to put the bilious nature of the complaint at rest: indeed, in some cases, all the bile discharged appeared to be the effect of the violent efforts in vomiting, having no connection with, or influence on the disorder. Dr. Watts informs me, however, that bilious discharges were common among the sick at Sacket's Harbour, and along the northern frontier of the state, and his description of the complaint is precisely that given by Cleghorn in the history above cited.

Having cleared the stomach and bowels, diaphoresis is generally excited with facility; in many cases common herb teas, as catnip, balm, pennyroyal, hemlock, are amply sufficient; when they are not, I have never been disappointed in the use of nitrate of potash, calomel and tartrite of antimony. The effects of diaphoresis are almost immediately

perceived in a subsidence of the febrile symptoms, the pain in the extremities, the head-ach, the improved condition of the tongue, and the appearance of the countenance. Care, however, must be taken not to carry the sweating process too far, for profuse sweating frequently debilitates the patient to a degree that baffles every effort for recovery.

The second indication, is to counteract pneumonic inflammation and its attendants. To accomplish this, I had recourse, in the first three cases that I attended, to blisters, but to my astonishment, found the pain in the side, in every instance, aggravated instead of being relieved. I have since entirely dispensed with them, and have made use of warm fomentations to the part, flannels rung out of hot brandy or vinegar, volatile liniment, bags of hot salt or bran, which seldom fail to mitigate the pain, if not to relieve it entirely. The cough is often very distressing, and the expectoration difficult; I have in these cases made use of the common pectoral mixture without the addition of any opiate, and demulcents, as barley-water, flax-seed tea, &c. with the best effects. In those cases which were attended with a numbness of the arm, I made use of camphorated spirits and friction.

Under this treatment, the pneumonic symptoms, pain, cough, and laborious breathing disappeared gradually, with the febrile ones, leaving the patient, however, greatly debilitated. In such cases, I have allowed them wine, or spiced wine, to the amount of four or five glasses in the day, along with beef tea and thin soup, till the appetite and strength increasing, they feel an inclination for solid food. I should observe that I tried the cinchona as a tonic in several cases, but without any good effect, and I think to the prejudice of my patients; I have invariably found the wine a safe and useful substitute. In one case that I attended, the complaint terminated in purulent expectoration, with occasional hæmoptysis, showing clearly the nature and seat of the complaint; and Dr.

Eights informed me that he had observed the same thing in one or two cases under his care.

In several instances, the disease terminated by the supervention of an anomalous rash, which was very prevalent in the city during the whole winter; in two cases, both very malignant, it terminated in scarlatina, which also prevailed at the same time; in the one it proved formidable, and my patient, contrary to every expectation, recovered; in the other, it appeared to hasten the fatal termination.

In two cases it has ended in metastasis, the pain suddenly leaving the side and seizing one or the other of the lower extremities, with great pain and swelling; this in one instance under the care of Dr. Eights, at first resembled the puerperal swelled leg; but gradually assumed the œdematous character, and in spite of every exertion, terminated in a sphacelation of the whole calf of the leg and more than half of the foot; in the other, it was œdematous from the beginning.

In cases of delirium ferox, I have made use of camphorated powders with advantage; but have in no instance administered stimulants, until the patient was convalescent, and then nothing more than wine, as formerly stated.

The epidemic has not only prevailed less extensively in this city since the first of March, but has been much less malignant, and seems to be considerably influenced by the approach of warm weather; though in places where it did not appear during the winter, it has raged with considerable mortality during the months of March, April, and May.

I may state, as a singular fact, that in two cases that I attended, the fever observed accurately the tertian period; both my patients had resided in Carolina, and had laboured under tertian intermittents, for several months annually, for five or six years.

IV.

Observations *on the* Epidemic Fever *which lately prevailed in the City of Albany, in a Letter to* James Low, M. D. &c. &c. *from* Dr. J. Eights, *Physician, Albany. Communicated by* J. W. Francis, M. D.

Albany, 10th May, 1813.

Dear Sir,

I am sorry it has not been in my power to comply with your request of April 19th until now, domestic and professional affairs having prevented me.

I feel happy to hear that you are about publishing an account of the epidemic which has prevailed so extensively in this city and throughout the state during the last fall and winter; as I am sensible no person is more capable of doing justice to the subject; and as the accounts heretofore given to the public by some practitioners are, in my opinion, very deficient.

I shall endeavour to answer your several queries in the order in which they occur.

1. The first appearance of the epidemic in the course of my practice was on 25th October, 1812, in the case of John Gillan, near Plain-street: he had been labouring in the camp at Greenbush, where it was supposed he had contracted the complaint. I was not called in until the latter stage of his disease, he being attended by Van Deusen, who bled him freely for a violent pain in the left side: this man died.

The second case was that of Van Molson, in Church-street: I saw him on the 28th of the same month. He was a ferryman between this city and Greenbush. Owing to the violence of the pain in the side, a scanty expectoration of bloody mucus, and the severity of the cough, I was induced

to bleed him; his pulse, which was apparently full and hard, now sunk rapidly, and he died shortly after; a few petechial spots were discovered before death. From this time the epidemic began to spread, but principally among the poorer class of citizens, until about the middle of December, when it commenced in different parts of the city and Colonie.

2. Those physicians who have published their observations on the epidemic, appear much at a loss concerning a name or character for the complaint. I think its nosological character and distinction is clearly defined by Cullen—Class Pyrexiæ—Order Phlegmasiæ—Genus Pneumoniæ—Species 2d. Idiopathic Peripneumonia, complicated with fever.

3. This complaint appears to have prevailed at the camp at Greenbush, and in various cantonments of the army, during the last summer; and the first patients that we had of it in this city were of those who had laboured, or had visited at the camp. A complaint very similar to the one now under consideration I find prevailed in the state of Vermont in 1810, which proved extremely mortal, and was then called the malignant pleurisy.

The following are the symptoms which usually appear in the complaint. The patient is sometimes seized suddenly, at other times he complains for a few hours of listlessness, weakness, pain in the head, back, and extremities; with chills following the course of the spine, at first slight, but afterwards increasing to a violent degree; those chills are peculiarly distressing to the patient, and in many cases continue for several hours: a distressing pain is now felt in one or other of the sides, which is much increased by breathing, and extending to the shoulder; to this succeeds a warm stage; the pulse during the cold stage appears small and weak; during the warm stage, full, but easily compressed or obliterated by the pressure of the finger; great difficulty and

distress in breathing, with a peculiar guzzling or rattling, as if the trachea was filled with a fluid. In most cases there was a violent cough, with an expectoration of a glairy mucus, often mixed with blood; delirium, or stupor, in many, with costiveness, or a torpor of the bowels; sometimes nausea attends, and often a distress, or load in the stomach. The tongue has a white velvet-like appearance; at times, though rarely, clean and moist; it soon, however, becomes yellow or brown: in several cases I have seen the tongue acquire a bluish appearance, as if deprived of blood. A great prostration in general attends from the commencement—In four cases I have discovered petechiæ, and in one vibices. There in general appeared to be an exacerbation of the fever in the morning, and a paroxysm in the afternoon or evening, and this continued when the patients were in a state of convalescence. I believe that the principal number of my patients were seized during the night, and many were of the number of those who retired to bed apparently in a state of health.

4. In a few of the cases which came under my observation, no great degree of pain was complained of by the patient; but those in general were apparently in a comatose state, or in a state of delirium: that there must have been some pain or distress in the side or breast, is evident, from the suffering of the patient, the short and distressed breathing, and from the cough and expectoration. That the lungs or pleura were affected in those cases, I have no doubt. That the thoracic viscera may be affected with inflammation, and that to such a degree as to destroy life, every person acquainted with the appearances of morbid bodies, and the extensive adhesions that take place in the chest, must admit. Morgagni relates the dissection of several persons who died of inflammation in the lungs, and where even a change had not taken place in their substance;

and yet the persons who were subject to the complaint never experienced any pain in the side or breast.

A peculiarity attending this complaint, which I have often discovered, is an interrupted or unequal pulse, which usually makes its appearance in the latter stages of the complaint, characteristic, I think, of an effusion in the cavity of the thorax.

Some few cases occurred in my practice where there was a violent pain in the head, principally over one eye; which was very distressing, and often in the back of the head.

5. No class of citizens were entirely exempt from the epidemic: but those most subject to it were the intemperate, the aged, and those who had been debilitated by former diseases, or by severe labour or fatigue, and those also who were labouring under the least pulmonary affection.

The remote cause of this disorder, I conceive to be a peculiar state of the atmosphere, favorable to its commencement and progress. In looking over my meteorological entries for the months in which this complaint mostly prevailed, the barometer ranged from 29 to 29.40, seldom at 30.

6. Except in very aged persons, the intemperate, or in debilitated habits, my prognosis has generally been favourable to the recovery of the patient.

7. Persons of all ages have been the subjects of this epidemic; infants under the age of two years are, I think, the only exceptions; but those most liable have been from the age of forty and upwards.

8. I must confess I have not discovered those strong bilious symptoms as described by some physicians. Many of my patients to whom emetics have been administered, evacuated little or no bile; but, on the contrary, a tough glairy matter, in some respects resembling the albuminous part of the egg. I believe, in every fever or affection at-

tended with typhoid symptoms, more or less of bilious matter may be evacuated; for even in a state of health, an emetic will often evacuate large quantities of bilious matter: and even the common purgative of calomel and jalap, given for far different affections, will produce stools highly bilious.

With respect to the colour of the evacuations, considered by some as vitiated bile, I believe it may often be nothing more than the contents of the stomach tinged of a cerulean blackish colour by the medicine taken; being informed that the sulphate of copper is a common medicine with some physicians to excite vomiting.

That there is in this complaint a local affection, and that of the lungs, I have no hesitation in saying, the symptoms attending the affection are sufficient to convince every person open to conviction: was it in the liver, as some would have us believe, from whence would arise the pain in the left side and shoulder, the cough and expectoration of bloody mucus; and why, when the pain is very acute in the left side, by applying an epispastic to the part, does the pain cease; and are there not several, who, having suffered from the disease, have afterwards had all the symptoms of confirmed phthisis?

That the liver may in some measure be affected, I do not doubt, but I consider it as a secondary effect, by the inflammation spreading along the diaphragm; and in this way occasioning a change in the secreted fluids.

Perhaps the following case may throw some light on the subject.

George Brown, aged forty-five years, on the 7th February, fractured his thigh; ten days after the accident his house caught fire and was consumed to the ground. He was removed into the open air, where he remained two hours, and was then conveyed to the house of his father, at the dis-

tance of a mile: while still confined, he was seized with the prevailing epidemic, with all the symptoms above noticed to an alarming degree; the pain was in the left side, extending to the shoulder, and much increased upon breathing; respiration very laborious, with cough, and an expectoration of much bloody mucus; pulse, the semblance of strength, but easily compressed. About the ninth day of the complaint, and when apparently on the recovery, he was suddenly seized with a violent pain on the inside of the thigh of the affected side, about three inches above the articulation of the knee joint. The whole leg and foot in a few minutes became much discoloured, with many vesicles, containing a yellow pellucid fluid: notwithstanding every exertion, a sphacelation ensued, and destroyed a large portion of the muscles of the leg, foot, &c. From the moment that the leg became affected, the side and breast were completely relieved, the expectoration, difficulty of breathing, and pain vanished. I forbear to give you a more detailed history of this case, my only object is to show that the lungs were affected, and not the liver.

9. From the many communications we have had on the nature of this complaint and the mode of treatment, it will be needless for me to enlarge, as you are already acquainted with my sentiments on the subject: suffice it to say, that in the commencement I generally evacuate the contents of the stomach and bowels with calomel and jalap, in which two, three, or four grains of the grey antimonial powder is mixed; this powder I repeat every three hours, until a free evacuation is effected. Usually upon a free evacuation a remission of the violence of the symptoms takes place with a moisture on the surface, which is promoted by gentle diaphoresis; when the pulmonic symptoms are severe, a grain or two of calomel is added to the diaphoretic. I usually repeat the cathartic every second day, should there not be

two or three free evacuations daily. The pectoral mixture I have found an excellent medicine to promote expectoration and to keep up a moisture on the surface. The external remedies, I have used to the affected side were linim. vol. hot spirits or vinegar, toasted oats or bran, hot embers and salt, and when the pain has been very acute, an epispastic.

It will be necessary to observe, that during the prevalence of this epidemic, the remittent fever has been commonly attended with typhoid symptoms, and in some measure assimilating to the epidemic, and which I have found required repeated evacuations; this I believe has been the cause of some of our physicians naming the epidemic the bilious epidemic fever; but in it the pain in the side has been wanting, likewise the expectoration of glairy and bloody mucus; and I believe it is in those cases where those violent emetics and purgatives, given and recommended by some physicians, have had any effect. Several cases of the true epidemic came under my observation, which were treated by the attending physician with violent cathartics and emetics: they almost universally terminated fatally.

That in the epidemic, repeated evacuations are necessary, every person conversant in the complaint must acknowledge, but I think they act in a far different manner than to purge off bilious matter. This matter I consider as the effect, rather than the cause of the complaint, and it being removed by the cathartics and emetics, prevents and removes the irritation that it must necessarily occasion.

Cathartics also answer another purpose; they reduce the inflammation, which I consider as the primary and most dangerous affection.

I shall only observe, further, that in the first three cases I was induced to bleed from the violence of the pain in the side, and the strong resemblance of the complaint to the pleurisy: the patients all died shortly after the evacuation.

From that time I have never bled a single patient. From the result, I think at least the inflammation not to be of the active kind.

Thus, sir, I have endeavoured to give you a few of my observations on the complaint which has prevailed so extensively. I believe they do not differ from those you have already made, and which have frequently been the subjects of our conversation; that they may, in the least degree, be of service to you, is my sincere wish.

I am, Sir, your friend,
J. EIGHTS.

DR. LOW.

V.

CASE *of* POPLITEAL ANEURISM, *successfully treated, by* HENRY U. ONDERDONK, M. D. *Secretary of the Medical Society of the County of New-York, and Member of the Royal College of Surgeons, London. Communicated in a letter to* DAVID HOSACK, M. D. *&c.*

New-York, June 7, 1813.

DEAR SIR,

IT is the opinion of several of my surgical friends, that all cases of aneurism occurring here should be published, as the disease is not frequently met with in this country, and the records of foreign cases are not widely enough circulated to make our profession familiar with them. Influenced by this advice, I take the liberty of requesting you to favour the following account with a place in the Register.

In the beginning of last month, Asa Utter, aged forty, and of a robust habit of body, consulted me on account of a swelling about the knee, attended with occasional shooting pains, and a contracted state of the limb. On examination there was found a tumour in the ham, nearly as large as the

fist, and attended with remarkably strong pulsations. This was evidently an aneurism of the popliteal artery.

Of the commencement of the disease, the account given by my patient was not very precise. He stated that for nearly a month he had noticed a pricking sensation in the ham; that about a week ago his heel slipping on a curb-stone, he "felt something give way" in the same part; and that the pulsation has been observed only four or five days. It ought also to be mentioned, that about five months before, I had prescribed for a cutaneous disease, a hardening, chopping, and scaling of the skin, affecting principally the extremities, which was cured by the use of ung. pic. occasional doses of sulph. sodæ and a free use of decoct. guaiac. offic.

As there was no doubt of the nature of the disease, so there was none as to the proper method of cure; and my patient consented to the operation with as little hesitation as I proposed it. As he was of a full habit, he was bled to ten ounces, and the next day took a full dose of sulph. sodæ. These reduced the strength of the pulsation very greatly.

On May 15th, with the assistance of Dr. Post, and in the presence of Dr. Kissam, Dr. S. W. Moore, and my father, I performed the operation in the following manner: An incision nearly five inches long was made through the skin, the center being over the point where the superficial femoral artery passes under the sartorius muscle. With a little dissection this muscle was laid bare, and turned aside. This brought into view the sheath* of the superficial femoral vessels. An incision was made through this, and the handle of the scalpel was insinuated under the artery, separating nearly an inch of its surrounding cellular substance. A double ligature was next passed under the vessel; one portion was tied as high upon the artery as it could be drawn; the other

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* Stabat nominis umbra.

portion was tied an inch below; the upper portion was then secured by being passed through the vessel, and tied; and lastly, the artery was divided between the ligatures, nearest the lower one. A muscular branch was divided in the course of the operation, both ends of which were immediately secured. The edges of the wound were brought together, and retained by strips of adhesive plaster, the limb well wrapped in a stocking and flannels, and an anodyne administered.

The pulsation of the tumour ceased on tying the artery, and a slight degree of numbness and coldness was felt. This latter symptom vanished in a few hours; and the limb, except the toes, became as warm, or warmer than the other. The wound was dressed on the fourth day, and found to have united by the first intention, excepting in the track of the ligatures; the tumour was also evidently diminished, and the general swelling about the knee entirely removed. The only untoward symptoms in the progress of the cure were, first, inflamed streaks on the inside of the leg, along the course of the vena saphena, which were attended with some pain, but readily yielded to the use of a cooling anodyne lotion; and secondly, an oozing of blood on the eleventh day, (noticed coagulated on the dressings,) which at first gave some alarm, but did not exceed a table spoonful in quantity, and which did not again occur: this bleeding was probably from the new granulations.

The ligatures from the muscular branch came away on the sixteenth day, at which time the limb could be straightened, and the tumour was rapidly decreasing. The upper ligature, and the piece of artery through which it was passed, came away on the twenty-second day; and the lower ligature on the twenty-third, (yesterday.) At present the aneurism is diminished to less than half its size at the time of operating.

It is very uncommon for an aneurism to increase as rapidly as this did. In Scarpa's work (p. 426—429,) are two such cases, but in those the disease was the consequence of a wound in the artery. I do not know of any case of aneurism, coming on without great violence, which has made as rapid progress as did that of my patient.

The passing of the upper ligature through the vessel, with a view of preventing its being forced off by the impetus of the blood, may not perhaps be deemed necessary, since the elucidation of the *modus operandi* of ligatures afforded by Dr. Jones in his treatise on hemorrhage. The internal coats of an artery being divided by a ligature, the little cylinder of them left within the cellular coat (which is not divided except by too great force,) will ordinarily afford sufficient resistence to the pushing off the ligature. It must be evident, however, that the precaution in question will greatly add to the security from hemorrhage, by retaining within the cellular coat this little cylinder of the internal coats.

It would be difficult to say, whether the former cutaneous disease had any effect in predisposing the arteries to become aneurismal. Scarpa has several cases of aneurism produced in patients who had been syphilitic, and were cured by mercury. My patient took no mercury. There appears to be some resemblance between this cutaneous affection, and that "steatomatous, ulcerated, squamous" state of the inner coat of the arteries, to which Scarpa attributes all aneurisms not produced by violence.

With sentiments of respect and consideration,

I am, dear sir, yours, &c.

HENRY U. ONDERDONK.

Dr. Hosack.

VI.

Sketch of the Medical Topography of the MILITARY TRACT *of the State of New-York. In a letter from Dr.* JOHN H. FRISBRE, *of Camillus, to* DAVID HOSACK, M. D. *of New-York.**

SIR,

YOUR letter of the 10th of September was received on the 4th of October. Professional and other business, of the first necessity, prevented me from answering it until now. I shall comply with your request with the utmost cheerfulness.

Query 1*st.* "How long have you practised physic in the country where you now reside?"

Query 2*d.* "What are the general features of the country in which you practice?"

Answer. I became a resident of this place in May, 1797. For the first two years, my practice was pretty much confined to the limits of this town. Since that period, my business, particularly in surgery, has been extending into the

* Those who are acquainted with the controversy relative to the character and origin of the yellow fever, know full well how repeatedly and confidently it has been asserted, that this disease is the production of marsh effluvia, and other domestic causes; and consequently, that it may be generated in all inland situations. The bilious remitting and typhus fevers, which some time ago prevailed in the Military Tract in the western part of this state, were, by some, said to be of the same nature as the malignant epidemic which has ravaged our seaport towns, and have actually been described as such by some of our sagacious journalists!! For the purpose of procuring the most satisfactory information concerning this disorder, and of placing this important subject in its true light, the following queries were addressed to such gentlemen as were best qualified to furnish satisfactory replies: and it is confidently believed that there cannot be found a single medical man, practically conversant with febrile diseases, who will identify the yellow fever with those which are described in this interesting communication. ED.

neighbouring towns, so that to describe the face of the country in which I practise, will be to describe the face of the whole of the Military Tract.

This country, with a few exceptions, may be called level. There are, indeed, in it some hills; but few, if any of them, exceed three hundred feet in height from the surface of our lakes and streams of water. These hills rise by an easy and almost imperceptible ascent, so that I know of none, in this tract, that will not admit of cultivation by the plough.

The country may be divided into three general sections, viz.

First, the elevated lands of Pompey, Fabius, Homer, Locke, and Dryden.

Secondly, the country south of these towns, in which the streams of water descend to the south, and fall into the Susquehanna. This part of our country may be said to be healthy: for but few cases of fever occur in it, and they are in the mildest form of intermittents.

The third general division, comprehending the lakes, their inlets and outlets, is that part of our country which is the most subject to fevers, and with which I am the most acquainted. This division, however, must be subdivided into the calcareous country and the alluvial.

The limestone extends from the eastern part of the military lands to their western boundary. It is from ten to twelve miles in width. It can be easily traced on its north line, through the towns of Manlius, Onondago, a small part of the town of Camillus, through the town of Aurelius, to the Cayuga Lake. Its southern boundaries are not so easily defined. The limestone is, in general, found covered with a bed of clay, from two to six feet in depth, which, in wet seasons, renders the roads almost impassable.

This calcareous tract of country, although not so healthy as the two first divisions, is much more so than the one to be

described presently. The water in this tract, although not good, is better, and the air is purer than in the alluvial tract. Many of the fevers of the worst type may be observed to commence in this and the neighbouring towns.

The alluvial country embraces the towns of Junius, Galen, Cato, Lysander, and Hannibal, on the north side of the Seneca and Oswego rivers; and part of the towns of Aurelius, Camillus, Onondago, Manlius, and the whole of the town of Cicero, on the south.

This tract, from the great number of ponds and marshes, and from its being intersected and watered by the outlets of the lakes, is subject to the usual fevers that are generated by animal and vegetable putrefaction. A particular description of any one of these towns will apply, generally, to all the others. I shall, therefore, describe the town in which I reside.

The town of Camillus, bounded north by the Seneca river, west by the town of Brutus, south by Marcellus, and east by Onondago, is a level, flat town. On the north-west part, for several miles (on the Seneca) it is a dead level, and this part of the town is annually inundated by the swelling of this and the Skaneattelas rivers. The west part of the town is intersected and watered by the outlet of the Skaneattelas; the east by the Ostisca; there is one pond, covering about three acres of land, situated on lot No. 84, near the old Genesee road, which at all times emits a nauseous effluvium; but, in dry summers, is very offensive to all those who live in its vicinity. From the exhalation arising out of this pond, from four streams and marshes, we cannot but have an air highly impregnated with marsh miasmata.

On the banks of these streams, around our ponds, and in our marshes, there are swarms of bats, gnats, flies, and musquitoes. The bats are so numerous, particularly in the month of August, that in crossingthe Seneca, in a still even-

ing, you may strike at random, and cannot help killing some at every stroke. They will frequently fly against you, and fall down in the boat.

It is on the banks of these streams, and near our ponds and marshes, that we find the most and the worst cases of fevers. The mud is frequently found of great depth, and our small streams, in many places, are not easily fordable on this very account. The soil, in some parts, consists of a black mould, of considerable depth, and, when trod up, has the appearance of lamp-black and hog's fat mixed together. In other parts, we have large beds of clay, which is, generally, found covering a stratum of limestone. In some parts, we have a soil of a reddish cast, which appears to be a compound of red sand and clay. This kind of earth is found in the greatest abundance in the town of Lysander, and is highly esteemed by our farmers for raising Indian corn.

There is a fourth kind of soil, consisting of sand and brown loam. This soil has once been covered by pitch-pines; for it is not uncommon for the farmers to plough up, in it, pitch-pine knots; and in some places, a cart-load of such knots may be collected, in this way, out of the earth, in a very short time. It is remarkable, that there is not a pitch-pine tree to be found within a great many miles of this place; and, in fact, I have not, to my recollection, ever seen one since living in the Military Tract. The country is, in general, heavy timbered. There are some groves of white pines, hemlock, beech, maple, button-wood, butter-nut, hickory, chesnut, oak, cherry, elm, poplar, bass-wood, white-wood, ash, and a variety of other kinds.

The water, in some places near the Seneca river, is salt; in many places, brackish, bituminous, sulphureous; and it is frequently found of a ferruginous taste. All the streams which arise in the calcareous tract of country, deposit a calcareous sediment. The water, in this division, is generally

bad and offensive, especially to strangers who are not accustomed to its use.

There are some sulphur-springs in the Military Tract. The one most deserving of notice is found about three miles north of Levana, in the county of Cayuga. On the surface of these waters a scum is frequently met with, resembling sulphur, in colour, taste, and smell. After a heavy shower of rain, all the temporary ponds and holes of stagnant water will be found covered with a scum, resembling sulphur.

Query 3. "What degree of heat do you usually experience in summer and autumn?"

Answer. As there are no meteorological observations made in this part of the country, this question cannot be answered in an accurate manner. In general, we experience considerable heat in our summers, more particularly in the alluvial tract of country.

Query 4. "Are your summers and autumns very sickly?"

Answer. They are. A great difference is, however, observable between those summers which are dry, and those which are otherwise. The former are most productive of fevers.

Queries 5 and 6. "What are your prevailing diseases?" "Are fevers the regular diseases of these seasons?"

Answer. Bilious fevers, of the remitting and intermitting type, tertians and quartans. Fevers of the above description may be said to be the regular diseases of our summers and autumns. Intermittents often continue through the winter.

Query 7. "At what time do they commence: during the hottest weather, or not until the season becomes cool?"

Answer. In dry summers, our fevers generally commence about the first of July, and begin to abate about the 15th or 20th of October. Intermittents frequently run into remittents, and by proper treatment, *vice versa*.

Query 8. "What are the first symptoms? and are your patients very suddenly seized and confined to bed, or are they complaining some days before?"

Answer. The symptoms, on the first attack, are not always uniform in every patient; nor are they so in several successive seasons. The fever of this year (1803) has been ushered in by cold chills, alternating with a sense of heat, lassitude, soreness of the flesh and bones, pain in the back part of the head, and, in some instances, extending down the spine. In some cases there was pain under the frontal, and in others under the temporal bones: pain in the breast, with difficult respiration; while in many there was a dry hacking cough. Some patients were affected with a pain in the lumbar region; others with a pain in the stomach, the lungs, the liver, and the spleen.

The large intestines, the diaphragm, and the mediastinum, have, in different patients, appeared to be the seat of the local congestions. The pain in the head is often periodical, and is accompanied with fever. The fever sometimes commences with vomiting of green and yellow coloured bile. In some cases, there is a constipation of the bowels; in others, dysenteric symptoms occur.

Since the first of July, I have had upwards of 200 patients under my care, with inflammations in the eyes. Some are confined suddenly; but, for the most part, the patients are complaining several days before the more violent symptoms appear. A great proportion of them attribute their disorder, at first, to a bad cold, which prevents them from sending for medical aid for some days.

Queries 9 *and* 10. "Does the fever begin with a chill?" "Is it worse every other day, or is there no observable intermission or remission of the fever in the first stage?"—"Are bilious vomitings frequently met with, and what is the effect of emetics?"

Answer. The greatest number of cases may be said to commence with a chill; and the patients are worse every other, every third, or every fourth day. The intermissions or remissions are generally obvious where depleting means have been used on the third day, sometimes on the fourth. But by far the greater number of cases are worse every other day.

Bilious vomitings are frequently met with; a nausea, always.

Emetics, when given after a copious bleeding, and in the first stage of our fevers, are generally attended with good effects. A remission of the fever almost always occurs shortly after the operation of an emetic, and the fever seldom ever rises to its first height after bleeding, and evacuating the contents of the stomach and bowels. I have heard of some instances where emetics have been said to do harm, by reason of the violence of their operation. But this happened where they had been administered previously to bleeding. I have met with few, if any, cases in my practice, in which I have not thought I perceived considerable advantage from the use of emetics.

Query 11. "What are the usual febrifuges you employ, and the effects of them?"

Answer. When I first commenced practice in this country, I used, in general, the following febrifuges: viz. James' powder and emetic tartar; with the use of these remedies, the usual diluents, such as balm-tea, sage and maiden-hair teas, rice and barley water, and a low diet, my patients generally recovered. The deaths, in cases of bilious fevers, have, at no time, exceeded one in fifty.

This season, which has been sickly, out of between four and five hundred patients, I have lost but one. This was an aged woman, of the name of Leech, a resident of Lysander. The first time I saw her, the symptoms were putrid in

a high degree. She lived five days after I saw her, and died on the eleventh day of her disorder.

I have been called, as a consulting physician, to some others, in the last stage of the disease, and when the symptoms have been nervous and putrid. These, in a few instances, have died. These cases, as occurring out of the ordinary course of my practice, and not exclusively my own patients, are to be excepted.

This season, my practice in fevers has been different; owing, however, to the symptoms being more inflammatory than in preceding years. I commence, as formerly, with bleeding, once, twice, or oftener, if necessary: then I give an emetic; after which I exhibit nitre uncombined, or order an infusion of the root of little solomon's seal, for a constant drink. If the emetic should leave the patient costive, I give, in some cases, a pill composed of socotorine aloes and tartar-emetic; in others, sulphur, which often answers better than more drastic purgatives, and will sometimes move the bowels when they fail.

When rheumatic pains occur, I give sublimed sulphur and g. guaiacum, combined.

When dysentery occurs, which I conceive to be the same disease differently modified, I bleed, use the above-mentioned infusion, and administer Dover's powder twice in twenty-four hours, in a full dose. I also make use of the starch-clyster with laudanum, the usual glutinous drinks and diet.

When the fever appears with inflammation of the eyes, another modification of the disease, I bleed, give nitre, order an infusion of the roots above mentioned, administer a cathartic (most generally Glauber's salt) epispastics, and sometimes sulphur, in lieu of salts, in some cases.

When the inflammation does not subside from the use of the above means, I introduce setons, and bore the ears.

I forgot to mention the use of the sugar of lead, dissolved

in water, and pledgets of fine cloth wetted with it, and applied cold to the eyes, as one of my first applications. After the inflammation has abated, I generally wash the eyes with weak brandy and water.

My method of treating intermittents is as follows: I bleed in the greatest number of cases, for I almost always find a determination to some of the vital parts. I give an emetic, then recommend to my patients to do nothing for their complaint until they have had about twenty regular paroxysms. I then order another cathartic, after the operation of which I give the bark, alum, and ginger combined.—Most generally, after taking the first dose, the fits leave them, and do not after again recur; never, indeed, when the patient is prudent in returning to his former habits of industry.

In this practice of treating intermittents, I stand pretty much alone. The rest of my brethren in this and in Cayuga county generally endeavour to cure this complaint without bleeding. I think I have seen the worst effects from this neglect. Intermittents, in which the bark and other tonics have been given previously to bleeding, frequently became putrid, &c. I have often seen pleuritic cases observe the type of an intermittent. What would be the effects of the usual practice in such cases?

Query 12. "What is the general duration of these fevers?"

Answer. The general duration of our fevers may be said to be about nine days. Some, however, terminate, when speedy medical aid can be procured, on the 3d, 5th, 7th, 11th days; while some cases extend to the 20th day, and even beyond that period.

Query 13. "What proportion die?"

Answer. In preceding seasons, in bilious remittents, the proportion was one in fifty. This season, I can almost say,

that not one has died in the circle of my practice, or but one, Mrs. Leech, formerly mentioned. I had not an opportunity of seeing her till the disease was in its advanced stage. I have always thought, that if depleting means had been used early in this case, it would not have ended fatally.

Perhaps it will not be improper to mention, that at no period since my settling in this country, has my practice been more extensive than at this season. I have not been able to attend, personally, to more than three-fourths of those who have called upon me. On an average, I have visited at least ten patients every day, from the 1st of July to the 20th of October. This estimate I am persuaded is too low.

Query 14. "When they recover, is the bark much employed, and with what success?"

Answer. I make but little use of the bark in our fevers. I prefer letting them recover without the use of this medicine. When they are convalescent from the fever, and when the intermissions are obvious, I do not use the bark. I find it to increase all the febrile symptoms; that the next paroxysm after the use of this medicine returns with redoubled force, and that the remissions are less obvious, and the complaint soon verges to the last stage, putrid and nervous. I have, therefore, with great caution, abstained from the use of the bark, and the usual tonics, in our fevers generally.

In periodical head-achs, and in one case of an inflammation of the eyes, I have used opium and bark, with evident advantage. In no other cases, this season, so far as I recollect, have I found much benefit from the use of the bark in fevers, except in the following: viz. when the fever becomes nervous and putrid (the very stage which is produced by the injudicious exhibition of the bark and other tonics, given prematurely) in such cases my chief dependence is upon the bark. I then give valerian, serpentaria Virgin. cortex aurant.

flor. chamomel. in decoction. In such cases, I also use epispastics, wine sangaree, elix. vit. and in some cases ardent spirits. I have often derived much benefit from the use of unguent. cœrul. rubbed upon the glandular parts, with small doses of calomel, opium, musk, and camphor, combined.

Query 15. "When it proves fatal, upon what day of the disease is that generally the case? What is the appearance of the skin; does it become yellow, or orange-coloured, or livid? When does this appearance first show itself? What is the state of the tongue? Are your patients very thirsty, as in most febrile complaints?"

Answer. When the disease proves fatal, it is, in general, on or about the 20th day. We have had one instance, in this country, of a fatal termination on the seventh day (Edward Donner, of Onondaga) who was supposed to have taken the fever by being several days on and about the Onondaga lake: one in Scipio, county of Cayuga, who died on the fifth, and one on the ninth day of the disorder. The two last were taken ill soon after being exposed to marsh exhalations, at the outlet of the Cayuga lake. A company of about twenty persons went from the town of Scipio to the outlet, where there is a large marsh, to procure hay. Twelve of the twenty sickened, and two died. About the same number went from the town of Milton, at the same time, and the effect, I am informed, was nearly the same.

It is a common thing to hear of the inhabitants of the southern towns being taken ill of fever, shortly after being exposed to the exhalations from their lakes, streams, and marshes. Doctor B. Beach, of Marcellus, who is in the employ of the directors of the western turnpike company, informs me, that in taking up a causeway, across a marshy piece of road, in the summer of 1802, five out of seven of his hands, who were employed in removing the timber, sickened. He at-

tributed their sickness entirely to the effluvia arising from the sloughy spot. All these patients recovered.

The tongue at first appears whitish. On or about the ninth day of the disease, sometimes sooner, if the complaint does not terminate in health, it begins to assume a brown colour, sometimes a black colour, and is much furred. The teeth, about the same time, become black, and covered with a brownish or black crust. The patients, in this as well as in the preceding stages, are very thirsty, often beg, and if denied will take, large draughts of water.

Query 16. "What is the state of the stomach? Is it apt to be in a very disordered state? When does irritation of this organ usually discover itself, and in what way? What is the appearance of the discharge from it? Is the *black vomit* of matter resembling coffee-grounds a common occurrence, and is it usually a fatal symptom? Upon what day of the disorder does it usually occur? Do hemorrhages frequently occur? How is the brain affected? What is the state of the pulse?"

Answer. An affection of the stomach may, in general, be considered as one of the first symptoms. I have often been called to patients taken in the night, and found them discharging from the stomach yellow and green-coloured bile. This irritation sometimes continues through the disease. I often cure it by the application of an epispastic to the region of the stomach, with bleeding and an emetic. The irritation generally goes off the second or third day.

The discharge resembling coffee-grounds is a rare occurrence. I have met with but one instance of it since I have resided in the western country. This was in William Gilchrist, jun. His complaint was uncommon throughout. He was taken ill in the fore part of the season, with a vomiting of bilious matter, which continued, without much abatement, for three or four months. The quantity of bile which

he discharged in this way is almost incredible. When I was called to him, a few days previous to his death, I found him emaciated to an astonishing degree. He had a hemorrhagy from his gums; or, rather, an oozing of blood from them. There was a tumefaction of the liver, and he vomited several times while I was with him, a matter resembling coffee-grounds. Notwithstanding his weakness and almost constant vomiting, he lived seven days after I saw him. He continued, until within a few moments of his death, to discharge not only his diet, but every thing that had been administered to him. *This, I say, is the only instance of* BLACK VOMIT *that has ever, to my knowledge, occurred in this country.*

Hemorrhages often take place, though none have occurred this season. I have met with them from the nose, the ears, the lungs, and the gums; from the uterus and urethra; from issues, setons, and ulcerated legs: but not, generally, to an alarming degree. They are easily subdued, and are seldom fatal. I have never, in any instance, seen a hemorrhage from the pores or surface of the body.

On their first attack, our fevers are evidently inflammatory, and a determination is generally discovered to some vital part. When congestion appears, or a determination to the head, delirium is the consequence. This symptom, however, with the others, generally goes off soon after using evacuations.

In some cases the head is periodically affected. To persons thus diseased, after depletion, I have given large doses of the bark and opium, which, with blisters, will generally effect a cure.

The pulse is full and strong. In the first stage, it sometimes exceeds 120 strokes in a minute, and is frequently found beating from 95 to 115. I have met with some cases in which the pulse was much slower, proceeding from an ap-

proximation to indirect debility.——I have met with the intermittent pulse; with a soft slow pulse: this happens where the brain appears to be most affected. But in all these preternatural states of the pulse, venesection will abate its frequency in the one case, and increase the number of pulsations in the other.

Query 17. "What treatment do you find the most successful?

Answer. In replying to query eleventh, the mode of treating our epidemics in former seasons, as well as in this, was described. The simple mode of treating them, which has been practised this season, at first view, appears to have had the best effect. Whether this has been owing to any essential difference in the disease itself, making it different from the epidemics of preceding years, can only be known with certainty, by trying it for several successive years. My own opinion, which corresponded with that of most of the practitioners in this quarter, is, that the fevers of this season have been much more inflammatory than has generally been the case.

The practice of giving nitre, as a febrifuge, instead of antimonials, in our fevers, has not, until this period, been much in use in this country; neither has the infusion of little solomon's seal ever been given by any regular practitioner in this country, to my knowledge, till I recommended it. I found that the Indians used it in fevers, by the name of "white-root." This suggested to me the propriety of trying its effects. I found it to form an agreeable mucilaginous drink, and have used it myself during the whole of the season. Those physicians to whom I have made mention of its apparent good effects, after recommending it themselves to their patients, have told me that they thought it an excellent drink in fevers, and preferable to any in common prac-

tice. I am so well persuaded of deriving benefit from it, that I shall continue to use it until I shall think otherwise.

Supplementary Answer to Query 15.

The appearance of the skin, on the first attack of the disease, is sometimes natural, but often of an orange colour. This occurrence generally disappears as the disease advances, especially where the depleting means have been freely used. I know of but few cases in which the skin was yellow after death. This appearance may be said to take place once almost every year, in some part of the Military Tract. It happened in the case of Elijah Laurence, who died in the fall of 1800. It has occurred once this year in the town of Scipio, and I have heard of three or four other cases, in different parts of this and Cayuga county, since my residence in the western country.

There is one symptom which has appeared to distinguish the epidemic of 1800. Glandular swellings were frequently met with. They generally discharged a good pus, and this was a favourable symptom. I had one patient, in the period last mentioned; a son of C. V. O. who had a number of glandular swellings, which suppurated and discharged pus of a healthy appearance. After some time, and when he appeared to be recovering, abscesses formed in other parts of his body. I opened, at different times, about thirty of them; they all discharged pus of a proper colour and consistence; he was neglected a few days; and a large abscess formed upon one ham, which discharged so much, that he began to fail; and, just before death, matter issued from his ears. He died without a struggle.

VII.

Observations *on the advantages of exposing* **Wounds** *to the* **Air** *after capital operations, with some remarks upon the removal of* **Scirrhus Tumours** *from the* **Breast.** *Communicated in a letter to* **Samuel Bard, M. D.** *President of the College of Physicians and Surgeons, by* **David Hosack, M. D.** *Professor, &c.*

New-York, June 29, 1813.

Dear Sir,

Many years since, you related to me the case of a patient whose limb you amputated, in which you found great difficulty in restraining the hemorrhage, but in which you at last succeeded, by keeping the stump exposed to the air a considerable length of time after the removal of the limb.

Although hemorrhage has ever constituted one of the most formidable embarrassments attendant upon surgical operations, and much ingenuity has been exercised in devising a great variety of astringent and other applications, for the suppression of it, yet this practice has not, to my knowledge, sufficiently attracted the attention of surgeons. Mr. Cooper, one of the latest and most respectable writers on surgery, incidentally notices the styptic effects of cold air, in promoting the contraction of the vessels; but he appears to introduce the remark for the purpose of showing, that no dependence is to be placed upon it, for he adds, that, "upon the wound being dressed, and the patient placed in bed, not an hour elapses before the renewal of the hemorrhage necessitates us to remove the dressings."*

* See Cooper's Dictionary of Practical Surgery, Dorsey's edition, vol. i. p. 433.

In the following case, which, from the advanced age of the patient, the duration of the disease, his debilitated habit of body, and other circumstances, was of all others the most unpromising, the exposure of the limb was attended with the most beneficial effects; as such, I communicate it to you through the medium of the Register, believing that this plan of restraining and of preventing the return of hemorrhage, may prove a valuable auxiliary in the hands of others under similar circumstances.

General William Crane, now resident in the vicinity of Elizabeth Town, New-Jersey, was a lieutenant in one of the New-York regiments, at the commencement of the revolutionary war, and was at the taking of St. Johns, (Canada,) in the year 1775. While engaged in laying a platform on the batteries, he was struck by a shell on the inside of the leg, a few inches above the ankle joint. Although the blow was violent, and injured the tibia as well as the soft parts, such was the fervor of his mind, that he totally disregarded it for twenty-four hours, when inflammation ensued, which ended in ulceration and a caries of the bone, that continued until the removal of his limb. His system has been greatly debilitated by the discharge from this long continued and extensive ulceration; but possessing a strong constitution, an equal and amiable temper of mind, and observing the greatest regularity and temperance in his mode of living, he has, in all other respects, enjoyed a considerable share of health, notwithstanding the drain he has sustained for nearly forty years.

The following extract of a letter from his attending physician, Dr. Isaac Morse, of Elizabeth Town, contains the most important circumstances which took place prior to the operation:

Elizabeth-Town, April 29, 1813.

DEAR SIR,

I have been conversant with General William Crane and have had knowledge of the ulcer on his leg, upwards of twenty-five years; he has been, and now is, one of the most temperate men I ever knew; he spared no time, pains or expense, to obtain relief, but has found none. On the 12th day of December last I visited him. At that time he was under the care of Dr. Cook, of Bound Brook. We found the ulcer very large and deep, a great part of the tibia bare and carious, with a considerable hemorrhage from the capillary vessels, together with the usual discharge from the ulcer, by which the General had become very much reduced. The course or channel of the tibial artery lay exposed to view. We were of the opinion, that the artery would soon be destroyed, and advised every precaution to be taken, should it happen in our absence; but very fortunately for him, when Dr. Cook was dressing the ulcer on the nineteenth day of December last, in my presence, the artery burst with such a violent hemorrhage, that with all our attention he lost at least twenty ounces of blood, which added much to his debility; but the artery was taken up and secured by a ligature. A considerable swelling of the leg and foot took place below the ligature, and continued for some time after, when the ulcer put on a more healthy appearance; those parts which were not irritated by the carious bones soon began to heal, and the General to recover his strength. I was unable to attend him on account of a fracture of my arm. Doctor Cook attended as usual; in about seven weeks I again visited him, found him in better health, and his strength greatly improved, the ulcer as when I left him, with the tibia almost destroyed. I then, for the first time, advised him to have his leg amputated, before which time the great debility of his body, by reason of the loss of so much blood, rendered

the operation, in my opinion, very doubtful. I am, dear sir, with great regard, yours, &c.

ISAAC MORSE."

A consultation of the physicians of Elizabeth-Town and its vicinity being held, it was decided, that unless the leg was immediately removed, he must inevitably sink under the discharge he then sustained.

On the fourth day of April last, I was requested to visit General Crane, for the purpose of performing the operation, if, upon another consultation, an amputation of the limb should still be thought expedient. I found the patient very much emaciated, his leg swelled and œdematous, the ulcer very extensive, but of a healthy appearance, and discharging well-formed matter.

Under existing circumstances, we were unanimously of opinion, that unless the operation should be immediately performed, the General must sink in a very few weeks, and that his only resource was in the loss of his limb. The result being made known to him, with his characteristic firmness, he at once yielded to our advice.

I immediately proceeded to the operation, which the majority of those present thought it advisable should be performed below the knee.

Upon the first incision being made through the integuments, a very large quantity of serum was discharged from the cellular membrane; upon dividing the muscles, these also were found in a very pale and flaccid state, exhibiting very little of that retractive power which usually takes place upon amputation. The bones were then divided by slow and steady movements of the saw, to as to prevent their edges from splintering, an accident which frequently occurs in consequence of the rapidity and violence with which surgeons usually conduct this part of the operation, and which seldom fails to end in a tedious caries of the bone so splintered.

To my great surprise, it became necessary to secure six large arteries, which, probably, had become thus enlarged in consequence of the anterior tibial artery having been tied some months before, as stated by Dr. Morse. The tourniquet being loosened, the blood still continued to flow profusely from the whole surface of the stump, even from the vessels of the bones.

As it was not possible to detect any particular arteries from whence the hemorrhage proceeded, I resolved to restrain the discharge, at first, by moderately tightening the tourniquet for a few minutes, and afterwards to leave the stump exposed to the air, until the bleeding should totally cease. I accordingly directed the persons present, excepting my assistants, to withdraw into another room; the windows to be raised, and some wine to be given to the patient, who was somewhat faint and exhausted. The stump was then exposed to a stream of fresh cool air; the hemorrhage immediately abated, and in a short time totally ceased, when the tourniquet was entirely taken from the limb.

After thus exposing the stump to the air about half an hour, (and, as I find, exposing myself to the censure of some of the by-standers, who, with watch in hand, counted every minute that passed,*) I proceeded by means of a sponge and warm water, to remove all the coagulated blood from its sur-

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* Having been severely censured by some of the *surgeons* of the village, for keeping my patient upwards of forty minutes on the operating table, I feel myself constrained to ask the same question Mr. Bloomfield, of St. George's Hospital, addressed to a pupil who pulled out his watch at the moment the Doctor was about to commence his operation, "What, sir, do you intend to measure the movements of my hand, as you would a horse's feet," adding, "Sir, let me tell you, that that operation is always *soon* enough done that is *well enough* done." Macbeth, when about to commit murder, says,

"_____ 'twere *well*
It were done *quickly*."

But this should never be the surgeon's motto.

face; no further hemorrhage ensued: the wound was then dressed in the ordinary manner; the patient conveyed to his bed; the limb lightly covered with a sheet, and a tourniquet loosely placed upon the thigh. An anodyne of fifty drops of liquid laudanum was then administered, and a direction given to repeat the same quantity at night, if pain, spasm, or great restlessness should render it necessary.

Upon the following day, I had the pleasure of receiving a line from Dr. Morse, informing me that our patient had passed a very comfortable night, without hemorrhage, pain, spasm, or any untoward symptoms. On Thursday, the eighth, I again visited General Crane, and dressed his limb. Upon removing the dressings, which had been previously moistened by spirits, the wound, to our surprise, was united throughout its whole extent, excepting at the lower angle, and another aperture through which the ligatures were passed, and discharged a well digested matter, without the least tinge of blood. Upon the seventh day after the operation, the ligatures came away; the patient was then put upon the use of bark and wine; the limb daily bathed with spirits at each dressing; the wound at the same time excited by an injection consisting of a solution of the sulphate of zinc in rain water, in the proportion of four grains to the ounce; the surface of the wound covered with dry lint and a light compress of linen; and the whole retained by a flannel roller.

By this general and local use of stimulants and tonics, and a corresponding attention to the diet and regimen of our patient, in about four weeks his wound was closed, and his health so far restored that he has been enabled to resume the direction of his farm, with the prospect of adding many happy years to his life, to the great gratification of his family and his numerous friends.

Whatever may be the opinion we form of the process nature employs in checking hemorrhage, this case under all

the circumstances attendant upon it, like that you related, is an evidence of the good effects of exposing a bleeding wound to the air.

Whether we believe the hemorrhage to be restrained by the formation of an internal* or an external coagulum, by the effusion and coagulation of blood in the surrounding cellular membrane,† by the retraction‡ of the artery, a constriction§ of the circular fibres of its extremity, or an effusion of lymph‖ from the divided vessels and the inflamed vasa vasorum, in either case, the long continued application of a stream of fresh air upon the part, is well calculated to prevent the evil to be apprehended; at the same time that the stimulant effects of the air, in cases like the present, will probably not a little contribute to excite that degree of inflammation in the wound which is necessary to accomplish the union by first intention. Its benefit, in this respect, was very apparent; for such was the enfeebled state of the general's constitution, and as has already been remarked, so relaxed were the parts themselves, that an immediate union of the sides of the wound was scarcely to have been expected without the aid of some local additional stimulus.

During your last visit to this city, in the early part of this month, you also had an opportunity of witnessing the success of this practice in restraining a very tedious and troublesome hemorrhage, which took place after an amputation of the breast. In that case, as is usual after that operation, although I had secured ten arteries by ligature, the discharge of blood was very considerable from the whole surface; but after remaining exposed for half an hour, the hemorrhage having totally ceased during the greater part of that time, the wound was dressed, and as in the former case, upon

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* Petit. † J. Bell. ‡ Pouteau.
§ Morand, Gooch, White, Kirkland, &c. ‖ Jones.

dressing it four days after, its sides were entirely closed, excepting that part through which the ligatures were passed. I have great pleasure in adding, that the patient has perfectly recovered.

In this too, as in the former case, the healing process was greatly promoted by the free use of bark and wine, a generous diet, daily bathing the parts with spirits, and by injecting into the wound a solution of the sulphate of zinc. I mean that these advantages were obtained after the first inflammatory stage had subsided, and the purulent secretion had taken place; for in the treatment of wounds, as well as in that of ulcers, surgeons cannot too carefully distinguish between these two stages, which may with great propriety be denominated the *active* and the *passive* stages of an ulcer or a wound.

As I have adverted to the extirpation of the breast, I cannot close this letter without mentioning the benefits which I have derived upon this subject from the valuable cases recorded by professor Richter;* and which do not appear to be sufficiently known and appreciated in this country. I refer more particularly to his treatment of scirrhous and cancerous breasts, in which he recommends the removal of the entire breast, even though the disease may be limited to a single gland.

In the first case of this nature in which I was called upon to operate, as early as the year 1795, the disease was confined to a small part of the breast, the remainder being apparently in its natural and healthy state; it was the opinion of all present that it was only necessary to remove the gland affected; this was accordingly done; but, within three months after, the other portion of the breast became diseased, when a second operation was rendered necessary for its total removal.

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* Medical and Surgical Observations by Aug. Gottlieb Richter, M. D. Professor of Medicine in the University of Goettingen, &c.—Edin. ed.

Similar cases have also occurred in the practice of others, and in some instances the renewal of the disease, the constitution having been enfeebled by the first operation, has ended fatally. Since that period, I have uniformly performed this operation by removing the whole glandular part of the breast, but retaining the integuments, except when they also have partaken of the disease; and in every case so operated upon, the patient has afterwards remained perfectly free from any return of the complaint.

This fact leads to two important conclusions. 1st. That in most instances the scirrhous or cancerous affection of the breast is a local disease, and not a constitutional one, as many physicians have supposed.

2dly. That in those cases, where only the part of the breast was removed, and the remainder had become subsequently affected, the latter disease had probably been induced by the inflammation occasioned by the operation in removing the first, and not from any vice of the whole system; for in those cases which I have witnessed, the secondary disease commenced during the existence of the inflammation which the operation had excited, and before the wound had entirely healed.

I am, dear sir,

with great respect and esteem, your's,

DAVID HOSACK.

SAMUEL BARD, M. D. &c.

REVIEW.

ART. I. THE LECTURES, *corrected and improved, which have been delivered for a series of years in the College of New-Jersey, on the subjects of* MORAL *and* POLITICAL PHILOSOPHY, *by the Rev.* SAMUEL STANHOPE SMITH, D. D. LL. D. &c. &c. New-York. Whiting & Watson. 8vo. 2 vols. Vol. 1st. pp. 324. Vol. 2d. pp. 386. 1812.*

OUR partiality for our native country is such, that we cannot view with indifference the success or failure of any effort of American genius, and as the author of the above-mentioned work is one of the few among our countrymen who have contributed, by their literary labours, to the advancement of science and the cultivation of our taste, we commenced the perusal of this performance with no ordinary share of interest and attention. Our solicitude was also, in no small degree, augmented, in the present case, by a thorough comprehension of the very arduous nature of the undertaking. Moral philosophy has, at all times, been regarded as one of the most important and useful branches of science, and has, in consequence, been sedulously cultivated by the ablest hands, both in ancient and modern times. On this subject, many profound lessons of wisdom may be derived from the works of Plato, Epictetus, Plutarch, Cicero, and many others of the ancient philosophers; but more especially from those two immortal tracts of Aristotle, entitled his ethics and politics, in

* The following review, it will be perceived, is the production of no ordinary writer. Though written on a subject not altogether within the general plan of the Register, it is presumed our readers cannot but be gratified with its appearance in this place. ED.

which we discover the traces of that stupendous genius, which gave to his opinions such oracular authority, and to his name such unbounded sway, for so many centuries, in the intellectual world. Since the revival of letters in Europe, the interests of this branch of science have not been neglected; but by no writers, who have come within our reach, has it been so systematically pursued, and so successfully investigated, as by Hutcheson, Paley and Beattie, who have recently favoured the learned world with works upon this subject, that will long remain, particularly those of the two last mentioned authors, noble monuments of their genius and erudition. Into this treasury, thus replenished, our countryman, the reverend president, has now cast in the stores of his intellectual wealth, and, we think, that by the liberal and intelligent both at home and abroad, it will be admitted, that by this addition it has been not a little enriched. It was a bold undertaking, it is true, to enter the lists with so many and such illustrious competitors; but from the ability of his previous works we anticipated much, and have not been disappointed. His treatise on the "Causes of the Variety in Figure and Complexion in the Human Species" is, in our estimation, one of the most profound and learned philosophical productions of our country, and such as would do honour to any philosopher of Europe. We consider ourselves as tolerably versed in the writings of the most celebrated preachers, who have adorned the pulpits of France or England, and have, occasionally, dipped into those of the Latin and Greek fathers, and we do not hesitate to pronounce, that the volume of Sermons he has published, whatever may be its faults, which, perhaps, are inseparable from all the works of man, will not be diminished by a comparison with the finest specimens of pulpit eloquence with which they have yet furnished us. His "Lectures on the Evidences of the Christian Religion" hold a respectable rank among the treatises of

Stillingfleet, Grotius, Paley, Beattie, Porteus, and those numerous writers on the same subject, who have displayed such masterly force of reason and such extent of erudition.

His "Lectures on Moral and Political Philosophy," the work, with the merits of which it is our present purpose, as far as we are able, to make the public acquainted, fully answer the expectations excited by his prior efforts, and we hesitate not to pronounce, is a master-piece of that kind of writing. We discover in it the same just and comprehensive views of things, the same philosophical cast of thinking, and acuteness of investigation, the same vigour of conception and felicity of illustration, and the same neatness, perspicuity and elegance of style, that distinguish all his other performances, and render him, undoubtedly, one of the most correct and able writers our country has produced. But lest we should be accused of indulging the language of extravagant panegyric, and of giving way to an overweening partiality for a favourite author, let us proceed to justify ourselves for the encomiums we have passed upon him, by giving a brief analysis of this work, and occasionally exhibiting, in extracts, such specimens of it, as shall enable our readers to judge for themselves.

In his introductory lecture, he defines, with peculiar precision and perspicuity, the nature and design of philosophy, and prescribes to himself on this branch of science those rules of philosophising which, ever since the age of the great Newton, have been followed in natural philosophy with such vast advantage to the science. We think that our author has been uncommonly happy in this introductory lecture, and that it is, decidedly, the best we ever recollect to have seen prefixed to any philosophical work. He has marked out in it the boundaries of that department of the sciences, of which it is his purpose to treat, and those that, in all of them, circumscribe the investigations of the human mind,

with such clearness and accuracy, that it cannot fail to be read with the greatest advantage by all those who wish to become acquainted with the true limits to which their faculties enable them to extend their researches, and with the best and most effectual mode in which those faculties may be exercised in the discovery of truth. By excluding all hypothesis from his system, and resting his conclusions upon fact and experiment, he has raised the superstructure of moral science upon a solid and durable foundation, and resorted to the most effectual means by which to push it on to its ultimate perfection, and attain the desired end of truth and certainty. It is in this respect principally, that modern philosophers have obtained advantage over the ancients, that, ever since the days of Bacon and Newton, rejecting all attempts to explain, by conjecture, the phenomena of nature, they have rested their systems upon the substantial basis of experiment. But upon this subject, we beg leave to refer our readers to the author himself:

"Philosophy is an investigation of the constitution and laws of nature, both in the physical and moral world, as far as the powers of the human mind, unaided by the lights of revelation, are competent to discover them. In this inquiry we can proceed, with any reasonable prospect of arriving at truth, only by a careful and extensive induction of facts, whence we may hope ultimately to attain to some acquaintance with the principles and causes of things. In the physical world, a minute and patient observation of the phenomena of nature, and, in the moral world, of the conduct of men, individually, and in their various social relations, is the only method by which we can gain any certain knowledge of their constitution, or of the springs and laws of their action respectively. We are, evidently, not endued with powers by which we can immediately inspect their essence, and discern their intimate structure, and thence be able, antecedently to experience, to anticipate the effects of their action, either singly, or in any possible combi-

nation. In order to understand the works of an infinite mind, and to draw from them any useful information, a being so limited in his capacities as man, should be contented simply to observe their effects with attention, and carefully to remark how those effects are varied in different situations and connexions, whence only we can form general rules concerning their operation in all similar and analogous cases. The wisdom of modern science has justly excluded from philosophy all hypotheses, by which the operations of nature are attempted to be conjecturally explained. Indeed, when a mind so feeble in its powers, and circumscribed in its views, as that of man, attempts to explain by conjecture the infinite plans of the Deity, or to unfold, *a priori*, as it is called in the language of the schools, the phenomena that result from their inscrutable structure, it is perhaps impossible that it should not err, or that it should approach even near the truth. Let hypothesis have antecedently formed its conjecture on any phenomenon in nature, with which experiment has since made the philosopher in some degree acquainted; as, for example, on the manner in which the eye perceives objects by the rays of the sun; or on the laws of that spark which we elicit by friction from a cylinder of glass; no man can doubt but that, before the principles of optics were discovered, and the structure of the eye laid open by anatomical dissection, or before the science of electricity was explained, ten thousand conjectures might have been framed, and all should have been almost infinitely and equally distant from the actual fact. Experience, therefore, and a diligent and attentive observation of the course of nature, and of the actions of mankind in every variety of situation in which they may be placed, is the only legitimate mean of attaining a competent knowledge of the laws of either the material or the moral world. But when experience has once conducted us from effects up to their causes, we may, in analogous cases, be reconducted by the same means, from causes with which we have become acquainted, to the effects which may be expected in known situations to result from them. For such conclusions, the constancy observed in nature affords us just grounds. We are taught by experience to expect a perfect uniformity of action in each cause

when placed precisely in the same circumstances; and from similar causes, in resembling situations, to look for similar effects. This tendency to uniform results we impute to some power in the cause, which, being essential to it, and belonging to its very constitution, will always operate in the same way, when not vitiated from within, or obstructed by some obstacle from without. We pronounce it to be a necessary consequence of a law of nature; and the regularity of action which obtains throughout all parts of the universal system, we ascribe to the uniform operation of established laws. It is on this ground that we study human nature in our own hearts; and that history may be regarded as a volume of moral experiment.

"Philosophy is divided into two great branches; the natural and the moral. Nature, taken in its utmost extent, embraces the whole compass of things in the universe, whether corporeal or spiritual, physical or moral. But, in this division of the science, natural philosophy consists in an investigation of the constitution and laws of body; moral philosophy in an investigation of the constitution and laws of mind, especially as it is endued with the power of voluntary action, and is susceptible of the sentiments of duty and obligation. Its chief end is to ascertain the principles, and the rule of duty, and to regulate conduct, both in our individual capacities, and in our social relations, whether domestic or civil. This is the object of our present inquiries. But in order to attain this end, in any considerable degree of perfection, it will be necessary to enter into many important disquisitions concerning the constituent principles, the natural tendencies, and the moral relations of that sensible, rational, and moral being, who is the subject of duty.

"In the universe there may be many orders of spirit, as there are many modifications of matter. We are, however, acquainted with two only; God, and the human soul. And our knowledge of the former, which must necessarily be extremely imperfect, from the infinite distance at which we are placed from him, must be derived principally from our knowledge of the latter. But, although our conceptions of the divine mind must be far from reaching the perfection of his nature, it is important that, as far as the weakness of

man is capable of comprehending the infinity of God, the ideas which we frame of him should be consistent with truth. For the duty of all rational beings must have a reference to his will. And our nature having been formed by his almighty power, can then only be perfect, when it is evidently conformed to his design in our creation." p. 9—13.

To the inquiry, what is a law of nature; and by what process are its laws to be collected? he returns the following answer:

"The essential nature of things in which the laws of their action are founded, it has been already acknowledged, cannot be intuitively known to the weakness of the human understanding. But their laws, as far as is requisite for the purposes of science, may be understood from a less perfect knowledge. The uniformity of a multitude of facts, arising from the action of any subject, indicates some principle or power in that subject, which, though unknown in its essence, we conclude, from our experience of the constancy of nature, will, in similar circumstances, always operate in the same way. This uniformity of effect, or rather, perhaps, the unknown but constant cause on which it depends, is denominated *a law of nature.* And the several classes of uniformities, which science has discovered in the system of the universe, are consequently ascribed to so many natural laws.* And when any fact or phenomenon occurs to our observation, it is said to be accounted for, or explained, as far as the human intellect is capable of explaining or accounting for it, when it can be referred to some common and known class of similar facts.

"This observation may be illustrated by a familiar example. The electric fluid, like all the other principles of nature, is, in its essence, unknown. But the uniform effects resulting from it, in a

* For instance, the uniformities which we observe in magnetism, in the refractions of light, or in the passions and emotions of the human heart, under the various circumstances naturally calculated to excite them, are called the laws of magnetism, of refraction, &c.

vast variety of situations, are now well understood from repeated experiment. They are, therefore, denominated the laws of electricity. We wish then to explain the phenomenon of lightning. And by applying to it the same tests as to the principle of electricity, with the effects of which we are are better acquainted, we find precisely the same results. We esteem it, therefore, accounted for, as far as human sagacity can explain it, not by revealing its essential nature, which is inscrutable, but simply by referring it to the class of electric phenomena.

"In the moral world, when we perceive, in all nations, that a bare inspection of the works of nature has led mankind to the acknowledgment of a Supreme Power which presides over the order of the whole, we justly infer, that the belief of the existence of God is to be ascribed to an original law of our rational and moral nature. The parental affection, in like manner, and the social inclinations of our nature, which, in all nations and ages, and in similar circumstances, we see operating with great uniformity, we pronounce to be natural laws of our being.

"Many resembling facts, therefore, indicate a law of nature. If any new fact, with which we have not before been acquainted, occurs to our observation, if it is found, in its properties, to coincide with any class of phenomena already known, it is supposed to be accounted for by referring it to that class. Otherwise it is called a solitary fact, which, of course, is left open to future inquiry.

"Thus, in the moral, as in the natural world, by an attentive induction of facts, that is, by observing the operations of the human mind in every variety of situation in which it may be placed, in solitude, or in society, in prosperity, or in adversity, in its various relations to our creator, or our fellow men, or in positions in which all the passions may be successively called into action, which observation may, with propriety, be stiled moral experiment, we arrive, at length, at a knowledge of the laws of our moral nature." p. 14—17.

The following are the rules of philosophising which he would have observed in this science:

"1. 'That no law should be admitted on hypothesis, but should rest solely on an induction of facts.' Some reasons for this rule have been already assigned; particularly the feebleness of the human mind, and the contracted sphere within which its observation is necessarily limited. It is but lately since the science of moral philosophy has been freed from the disgrace and embarrassment of hypothesis at its very entrance, in its inquiry concerning the manner in which we become acquainted with external objects by sensation. It was first laid down as a principle, that no material being can act where it is not. The question then arose how we perceive objects at a distance? To solve this difficulty, recourse was had to the following hypothesis:—that every sensible object is continually emitting from its own body some images of itself in every direction, which the ancient philosophers denominated *ideas*, or *sensible species*, and that these aerial, gaseous, or almost spiritual images impinging upon the organ of sense, communicated, by that impulse, a perception of their subject; or rather a ground of inferring its existence, from the vivacity of the impression. Such was the doctrine of Aristotle, and from him of the whole peripatetic school. And there are some vestiges of it even in the philosophy of Locke, of which Berkeley and Hume availing themselves, denied the existence of the material subject altogether, as being wholly unnecessary.* But let the mind be relieved from the philosophic delirium of hypothesis, and form her judgments on experience and fact, interpreted by plain common sense, and we must pronounce a totally different decision. Whatever medium, in the opinion of these philosophers, nature may employ

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* If, say they, according to the peripatetic hypothesis, or the metaphysic of Locke, the principles of which were generally acknowledged in the time of these philosophers, it be only the images or ideas of objects that we perceive, and not the objects themselves, what ground can there be to infer their existence? Ideas, it is confessed, may be impressed on a lively imagination, without the presence of any external substance. And, agreeably to the scheme of Mr. Hume, the vivacity of the idea is the only criterion of truth. The reality of the material world, therefore, perishes by the fairest inference, since, according to the confession of its friends, it is not the object of our perceptions.

to connect the object with the organ of sense, whether image, or idea, or any other sensible phantasm, it is, beyond a doubt, the object itself, not its idea, which is discerned by the sense, any image or phantasm in the case, being either unknown, or unperceived, and at the time wholly unthought of. An idea is merely a conception of the fancy, or the reminiscence of an absent object.

"2. Another rule is, "that laws collected from an ample and accurate induction of facts should be deemed universal, till other facts occur to invalidate or limit the conclusions which have been drawn from them." Unless we could rely on this rule, the progress of science would be arrested almost at its commencement. Few are the conclusions which we could frame, if it required a knowledge of facts strictly universal before we could admit a general consequence from induction. And the known analogy of nature is a sufficient and satisfactory ground of those general inferences embraced within the rule. On this foundation solely, we build our knowledge of the constituent principles of human nature, the laws both of physical and moral action in man, and the acknowledged maxims of society, domestic and civil.

"3. In the third place, "laws founded on a partial induction of facts, should not be extended beyond the limits to which they are certainly known to apply." The neglect of this rule is one of the principal causes of national antipathies, and of the bigotry of religious sects. From a few facts imperfectly observed, a rash and unfair judgment is pronounced on a whole party, or a whole nation. With the same confident precipitancy have we sometimes heard the natives of Africa, who have been contemplated only in a state of savagism or of slavery, pronounced to be destitute of the best faculties of human nature; and the American continent judged to be unfriendly equally to corporeal vigour, and to mental talent. It is a rule, especially, by which we should rigourously examine the narratives of travellers, and of those writers who profess to exhibit comparative estimates of the characters of foreign nations, so seldom have they an opportunity of observing the interior of their manners; and so much more rarely do they possess the talent ne-

cessary to trace the causes of what they observe with philosophic accuracy, or the inclination to represent them with candour.

"4. A fourth rule is, "that similar appearances should, because of the uniformity of nature, be referred, as far as possible, to the same causes." On this rule, we interpret the actions of men in all their various relations in different portions of the globe; and we find them to be the same as fathers, brothers, sons, as the members of a family, or of civil society. We discern but one race throughout the whole. To take another example from a peculiar department of our nature. The belief of spectres, of the feats of witchcraft and magic, and of those little tricky or mischievous sprites, which are found among the traditionary tales of the vulgar in most of the modern countries in Europe, ought to be ascribed to the same principle; the force of a timid and ardent imagination unregulated by the science of nature, which anciently filled Egypt with magicians, and Assyria with soothsayers, and peopled the hills, the streams, and the skies of Greece, with the objects of a superstitious veneration.

"5. The last rule which I mention, is, "that the testimony of our senses, and of all our simple perceptions, ought to be admitted as true, and no ulterior evidence be required of the reality, or the nature of the facts which they confirm." The informations of the senses are intended to be ultimate. They are perfectly simple, and cannot, by any artifice of language, be rendered more obvious or clear. They are the first elements of our knowledge; and the only acquaintance which we can have with the nature of their objects is conveyed in the impression which they make upon the organ of perception. This rule is of the more importance, because philosophers, of no inferior name, have appeared in modern times, as well as in the earlier ages of science, who have denied the certainty of our senses, and have reasoned concerning their operations with such excessive subtilty, as to confound the most obvious and natural consequences resulting from their informations. While they have filled the rational and intellectual sphere with images, ideas, and sensible species, and other such shadowy forms, as substitutes for a material world, they have utterly denied the reality

of body. Others carrying their temerity still farther, have denied the reality both of body and spirit; and have equally reduced the physical and the moral world, to a mere train of fugitive and unsubstantial ideas." p. 19—24.

After giving this definition of his science, and prescribed the rules of philosophising, he proceeds, as a kind of preliminary dissertation, to the contemplation of man as an individual, and an examination into the constituent principles of his nature, which more properly and peculiarly belong to the science of moral philosophy; to take a comparative view of him, in relation to the other species of animals upon this earth; and then enters into the important and necessary inquiry concerning the identity of the human race; and from this passes on to the consideration of his prolific powers, or his faculties of continuing and multiplying his species; with some reflections on the best means of augmenting the numbers of mankind, with reference, particularly, to the population of states. He takes a view of man, in the third place, as a social being, pointing out the various forms of association, under which the race is disposed to collect itself, so different from those in which other gregarious animals are found to assemble. Lastly, he considers man's capacities of improvement, in which he so far transcends every other species of animals; under which head, he embraces the structure of language, the invention of arts, and the origin and progress of science.

In his comparative view of man, in relation to other animals, after remarking that he is distinguished from all the other inhabitants of this globe, by the exactness of his form, by a noble and commanding expression of countenance, and by an infinite number of muscles and articulations, in the structure of his limbs, which adapt them to an infinitely greater variety of easy movements, and useful purposes, than

those of any other animal, particularly in the nicer operations of the arts, without which they could never have been practised nor invented; he concludes the passage with these reflections, which, as they serve to vindicate from objections the works of the creator, and to illustrate his wisdom and goodness in the arrangements of his system of nature, and the inscrutable dispensations of his providence, I shall here insert:

"The eminent advantages of our nature above that of other animals, seem, on a superficial view, and on first impression, to be balanced by proportional disadvantages in its original imbecility, its innumerable wants, and its long dependence upon the care of parents, evils to which the young of those animals seem not to be equally exposed. Yet, a closer inspection will demonstrate, on the other hand, that these apparent disadvantages contribute, eventually, to the felicity and perfection of human nature. Do not the nakedness and softness of his skin, and the extreme delicacy of his organization, promote the fineness and softness of his feelings, and the quickness of his perceptions; just as the finest chords vibrate to the gentlest pulses of the air, and emit the sweetest sounds? Do not his wants quicken his ingenuity, and the poignancy of all his sensations tend to awaken his moral sensibilities, and to aid the transition of his benevolent sympathies? And, finally, does not his long dependence upon the care of parents, and the tedious period of their solicitudes and pains, contribute to strengthen the reciprocal ties, and sweeten the mutual endearments of the domestic affections, and thereby lay the firmest foundations of the order and happiness of civil society? What seemed at first, therefore, to be a peculiar disadvantage on the side of human nature, is discovered, on more mature reflection, to be a mean of carrying its faculties eventually to the highest pitch of improvement, and building, on their improvement, the felicity of mankind. By this order of things, as will hereafter be more particularly seen, our beneficent creator has evidently intended to promote

both the intellectual powers, and the virtuous habits and affections of the species." p. 13, 14.

On the subject of the identity of the human race, he gives us a brief summary of those arguments that go to establish it, which he has exhibited with such masterly skill and adroitness in his treatise on the "Causes of the variety of figure and complexion in the Human species," in which he has drawn us toward his conclusion, by the cords of a man, and displayed such acuteness of philosophical investigation, and such a vast accumulation of learning.

The difficulty which occurs on this subject, and which it is the purpose of the aforementioned treatise to solve, is to reconcile the varieties in form and aspect which exist among mankind, in different regions of the globe, with the fact of their original identity. The principal varieties which distinguish the different portions of the human race from one another, are ranged, by him, under the heads of stature, of corpulency, of complexion, of hair, of features, and the figure of particular limbs.

"The colour of the inhabitants of the torrid zone is generally black, modified, however, by various circumstances, such as the elevation of mountains, or the vicinity of seas. A lighter shade of the same colour prevails within the regions of extreme cold, bounded generally by the arctic circle. Below this limit, as we descend to the south, we find, in the highest temperate latitudes, the most coarsely ruddy and sanguine complexion, and commonly the most ample volume of body. A more delicate red in white succeeds. And, as we advance to the equator, we discern successively the various grades of dark complexion from the swarthy to the deepest hue of the human skin. The features are most coarse and harsh in rigourous climates, and in a state of savage or barbarous manners. On the other hand, they evolve themselves with more regularity, and with greater softness under a mild and

temperate sky, and in a refined and cultivated state of society, not yet corrupted by luxury. The Tartar is distinguished by the elevation of the cheek, and depression of the nose: and the tropical African adds to the deformity of this feature a remarkable flatness and expansion of the nostrils, and protrusion of the lips. The hair of all dark coloured nations is generally black. But, in the negro, it is also crisped like wool, and curled in a close nap to the head. With regard to the figure of particular limbs, it will be sufficient to remark, that the head of the north-eastern Asiatic, and Esquimaux is larger, the neck shorter, and the feet and hands smaller in proportion to their stature, than the same limbs in Europeans, the southern Asiatics, or the Anglo-Americans. The legs of the Tartar are short and bowed, and those of the African negro generally gibbous. Many other peculiarities have been related concerning the eyes, the ears, the breasts of females, and other parts of the body, in different nations, which hardly deserve to be mentioned. The minuter shades of difference, by which the various tribes of mankind gradually approach, or recede from one another, in their physical appearance, it would be an unnecessary labour to detail; for, if a satisfactory solution can be given of the principal distinctions which subsist among them, an intelligent mind will readily apply a similar train of reasoning to explain the rest." p. 36—38.

The causes which operate in nature to produce these varieties in the species, he reduces to three, climate, manner of living, and the state of society. By climate he means, principally, the degree of heat or cold which prevails in any region, with such other influences in the earth or atmosphere, as immediately result from these; which are usually proportioned to the distance of any place from the sun. Latitude, however, is not an exact measure of the temperature of countries, which is greatly modified by the nature of the soil, the elevation of the surface, the circumfluence or intersection of great bodies of water, and many other circum-

stances. Climate has an influence in the discoloration of the skin, not only by its immediate action on the external surface of the body, but also by the powerful effect it produces, as naturalists inform us, on the actions of the liver, that great laboratory of bile in the human system. This secretion is greatly augmented, likewise, by the superabundance of putrid miasmata evolved in such regions from stagnant moisture, and decaying vegetable substances. From whatever cause it is increased in quantity, it is known, in the same degree, to heighten the discoloration of the skin; for bile, although it puts on a yellowish appearance while it is confined within the system, yet immediately assumes a black hue as soon as it is exposed to the air; which, in a degree, takes place when it arrives in the circulation at the surface of the body. In this manner, he proceeds to give a short sketch of the argument, which he has pursued with greater amplification and minuteness of detail, in his former work, and which, in our estimation, is calculated to produce full conviction on the minds of those who will give themselves the trouble to peruse it with attention. We think that the merit of the reverend president, in this performance, does not so much consist in his having elicited hints that are entirely new, (although we are fully assured that his claims to originality, also, are as strong as most of those authors that have written well on the subjects of philosophy, since the revival of learning in Europe) as in his having, by an able exhibition of the arguments and masterly arrangement of his materials, given to his treatise the complete form and pressure of a moral demonstration. For our own part, we are inclined to think, that of all the varieties in form and aspect under which our race appears, in the various regions of the globe, the only ones which can be considered as phenomena, whose solution is attended with real and serious difficulty, are the curled hair and the indelibly black skin of the African ne-

gro: for as to the thickness of their lips, the flatness of their noses, and the gibbousness of their legs, &c. these are effects which may as easily be accounted for from the operation of known moral and physical causes, as many other appearances in the bodily structure of our race, and among that portion too whose claims to be ranked among our species are incontrovertible. The circumstance so well attested, mentioned by the doctor, of the black man in the state of Maryland, who lost his colour by degrees, and became a perfectly white one, and whose whiteness, moreover, was not of that pallid and diseased hue which distinguishes the Albino race, but exhibited that pure and healthful complexion which is seen in the ordinary class of Anglo-American labourers, goes so conclusively to prove, that the woolly appearance of the negro's hair depends upon the qualities of that substance lodged in the cells of the skin, which is its nutriment; in as much as it is stated as a fact, that in proportion as the black colour forsook his skin, and the white extended itself over his head and body, wherever there had been wool, it entirely disappeared, and gave place to a fine straight hair, almost of the softness of silk. I say, inasmuch as this single fact goes so conclusively to prove, that the curled hair of the African negro is produced by the causes to which the learned doctor ascribes it, we may narrow the controversy still more, and reduce the whole difficulties to this single problem, can the indelibly black skin of the African be accounted for from the operation of those moral and physical causes to which it has been ascribed by our author? This is, in fact, the only difficulty, in our estimation, which cannot, with the utmost facility, be removed to the entire satisfaction of any one who is not determined to shelter himself from conviction under the most wanton and stupid incredulity. On this point, the philosopher hesitates not to admit that there is a striking and stubborn difficulty. We can readily believe,

that all the intermediate shades between the fair complexion of the temperate zones, and the dark one of the torrid, may be produced by the influence of climate, the state of society, the manner of living, &c.; but how it happens, that the skin becomes permanently and indelibly black, that this black complexion is transmitted from father to son through many successive generations without any material alteration; here lies the mystery in the operations of nature, which it requires all the penetration and research of the philosopher to develop. This is the problem, and to afford a solution to it is the desideratum, hoc opus, hic labor est. And we hesitate not to declare, that the learned author, in his work upon this subject, has given a solution of this matter, perfectly satisfactory to every liberal and impartial inquirer after truth. It is not to be expected, indeed, that we shall be able to calculate the precise and determinate degree of heat, which is necessary to produce a colour indelibly black, since we have no thermometer by which this can be ascertained, as we can determine the degree of heat at which a combustible substance is raised to the point of ignition. Nor is it possible for us to decide with certainty, whether, when those nations whose colour has become indelibly black, are transferred from the torrid to the temperate zones, and, of course, the action of those causes removed which produced their complexion, nature would, by as regular and rapid a retrogade process, return to the colour of white men. This is a matter which can be determined only by experiment, as, at present, we have no data on which to form a conclusion. The presumption, however, lies entirely in favour of the hypothesis, that the dark hue of the negro will, at length, yield to the influence of our climate, and revert to the fair complexion. From our own experience, we can testify to the truth of the fact, stated by the Doctor in his treatise, which it seems some writer in the American Review, who has under-

taken the task of reviewing this work, without having given himself the trouble duly to comprehend it, has controverted, viz. that there is a marked and obvious improvement in the appearance of the household servants in our southern states, both in their forms and features, and that this circumstance is not to be accounted for, as asserted by that reviewer, by the consideration that they are taken into the families of their masters on account of their personal appearance; since, although this may, in some instances, be the case, yet, for the most part, the holder of slaves, in his selections of those who are to attend his person and domestic concerns, is influenced principally by a regard to their moral qualifications, their honesty, fidelity, industry, and tractable dispositions, and not by the comeliness of their figures, or the regularity of their features.

And in regard to the assertions of this reviewer, that the hue of those negroes, who are well fed, well cloathed, and brought up in habits which approach nearer to the children of their masters, is more dark than even the slave immediately imported from Africa, which fact, he thinks, strongly militates against the system of our author, I would barely remark, that the direct opposite of his opinion is the real truth. The negro immediately transported from Guinea is easily distinguishable from the descendants of the natives of that country. I consider the dry and adust hue of the Guinea negro as the worst possible effect that the intemperate ardours of their vertical sun can produce, as the utmost excess of the black colour; and that the ebon and glossy complexion of the household servant of a southern gentleman, although perhaps equally dark, is the first remove from that excess. But, in regard to this matter, we feel very little concern, since the merits of the question to which I would now return, and shall dismiss with a few more remarks, are not at all involved in it.

In the first place, if it be possible to account for this indelibly black colour, from the operation of any known moral or physical causes, it is against the soundest and best established rules of philosophising to look for any others to which to refer the phenomenon. No more causes of things are to be admitted than are absolutely necessary to explain the phenomena, is a maxim deduced from an observation of the invariable simplicity of nature in her operations, and has become an axiom in all philosophical investigations. If, therefore, the phenomenon of this permanently black complexion in the African can be explained upon the assumption of the original identity of the race, from the operation of the causes which have been assigned, it would be an outrage upon the primary and fundamental rules of reasoning to admit a diversity of origin. This reasoning is so clear and conclusive, and, withal, so philosophical, that we should have been utterly astonished at any attempts to impugn or invalidate it, more especially from those who are always forward in expressing their supreme devotion to the principles of philosophy, had we not been well acquainted with the endless manœuverings and stratagems, inconsistencies and tergiversations of the whole tribe of unbelievers. To their grand purpose, indeed, the extermination of christianity, they adhere with the steadiness and pertinacity with which the needle turns to the pole; but, in regard to the grounds on which they shall conduct their assaults, and the expedients to which they shall have recourse in order to effect its ruin, they are as variable as the wind. The reviewer before alluded to, discovers extreme solicitude to shelter himself from the imputation of entertaining views inimical to religion, in his attempts to refute the arguments of our author, so much so, that by his very laboured and overwrought effort to exculpate himself from the charge, he has rather left in the mind some suspicions of his sincerity; but his illustrious predecessor, Lord Kames, is less scru-

pulous and timid, and unblushingly indulges his sneer. But whatever may be the outward professions or inward sentiments of this reviewer, or any of his auxiliaries, there cannot be the smallest doubt, that hostility to our religion is the source in which originated the opposition to the doctrine maintained by the Doctor. Complaint has been made, that the interests of religion have been identified with those of this abstract and philosophical question, and its fate involved in the success of a theory; but, the fact is, that, in the present case, it is impossible by any effort to disentangle them from each other. Does not the account given us by Moses naturally lead us to conclude, that Adam was the great forefather, from whose loins sprang the whole of our race, and that God formed of one blood all the nations of the earth? Do not the scriptures expressly assert, that after the flood the whole earth was overspread by descendants of the three sons of Noah? Further, if the doctrine of the identity of the race be not a fundamental truth of our religion, it is inseparably connected with those which are. That the fall of Adam subjected us all to the dominion of a depraved nature, to sin, misery, and death, and that the sacrifice of the Redeemer became, in consequence, necessary to retrieve our losses and regain our forfeited blessings, are doctrines which lie at the foundation of christianity. Now, how could the effects of Adam's transgression be extended through the whole race, but by virtue of the relation in which he stood to all as their great representative and federal head? Could all mankind be supposed, with any show of reason, to have died in him, and afterwards been made alive in Christ, unless they were his lineal descendants? Not only, therefore, is the whole philosophy of man confounded, as asserted by our author, by that hypothesis which divides the kind into different species, but the whole system of revelation also, and the whole plan of salvation through the Redeemer. So that,

in truth, the Rev. Doctor, in advocating with such irresistible force of argument as he has done, the identity of the human race, was not so much engaged, as he modestly says of himself, in defending the outworks of our religion, or in carrying his attacks into the enemy's camp, as in fortifying and protecting the citadel itself.

If, in the present instance, he has made successful excursions into the fields of natural science, he has returned laden with spoils to enrich and adorn the sanctuary of his God. We would, however, by no means be considered as indulging in such reflections as the foregoing, with a view to preclude a fair and philosophical investigation of this subject, or to shelter ourselves from opposition behind the infallibility of holy writ. The truths of christianity can never receive any detriment from the most rigourous examination of a sound and just philosophy.

The researches and discoveries of true science, instead of having impaired the credibility of our scriptures, have rather thrown light upon that sacred volume, and corroborated and established the evidence of its truth. The point now under discussion affords a striking exemplification of the truth of this maxim. What account of the origin of our race and the peopling of the earth, could be more simple, rational, and consonant to the principles of a sound philosophy, than that which is contained in the Mosaic history. Had our sacred scriptures informed us, following the fabulous legends of heathen antiquity, that the founders of the different nations had their descent from the gods, or sprang up, like the men of Cadmus, from the teeth of serpents sown in the earth; or, that the dark coloured inhabitants of the south were formed out of the black mud of the Nile, what rare sport would they have afforded to cavillers! Had they even espoused the opinion of Lord Kames, and given to each distinct nation a different progenitor, or that of those who sup-

pose the African to be of the same kind, indeed, but of a species inferior to white men, the scene which has been exhibited in this controversy would have been completely reversed. What learned dissertations would then have poured upon us, from the school of infidelity, concerning the simplicity of nature in her operations, and those established rules of philosophising, which excluded the admission of any more causes in the explanation of phenomena than are indispensably necessary. Thus the enemies of our religion can espouse, or desert, the principles of philosophy, according as it suits their purpose at the time. There is no possible form in which a divine revelation could have been made to us, which would have secured it against their wanton and unprincipled attacks. They can assume all the shapes of Proteus, and give to their doctrines all the colours of the chamelion, in order to accomplish their favourite object, the utter extirpation of the christian faith.

In the next place, in reference to this question, I would remark, that the whole weight of proof, (and there is a vast accumulation of it) is in favour of the identity of the race; while on the other hand, we are driven into the very improbable and unphilosophical hypothesis of a diversity of origin, only by the difficulty which we meet in our attempts to solve the phenomena exhibited in their figure and complexion. Every possible consideration which can at all enter into an argument of this kind, leads us to conclude, that the black colour of the African is an effect produced by the intemperate heat of his climate, and yet we shrink from a conviction of that truth, because we cannot comprehend the secret process by which nature operates such a wonderful change in the appearance of our species. Nothing can be more dishonourable to the physiologist and philosopher, than to evade the evidence of truth by such a subterfuge. It is, for example, an unquestioned fact, that warm climates have

a powerful influence in the discoloration of the human skin. It is equally certain, that the same effect is, although in a less degree, produced by the state of society and the manner of living. It is certain also, that in proportion as the climate becomes hotter, the bilious secretions become more copious, and these tend to darken the complexion of men. It is to be observed, moreover, that the effects of the temperature of climates upon the skin are visible in our approach to the equator, the hue gradually deepening, until at length, in all tropical regions we find the colour of the inhabitants generally black. Now, with these premises in our possession, is there any resisting the conclusion, that in the interior of Africa, where all the aforementioned causes act upon the inhabitants in their utmost power, their indelibly black hue is the result of that action? From a peculiar concurrence of circumstances it is known, and demonstrated by our author, that that portion of the earth inhabited by the negro, is more intensely hot than any other, and of course there also, the bilious secretions have their worst effect, in darkening the complexion. The debilitating influence of their intemperate climate, that totally unfits them for any mental or corporeal exertion, has prevented them from making any advancement in the sciences, or improvements in the arts, and thus, at all periods they have continued in a state of the deepest debasement and savagism. When all these circumstances, which, it is admitted on all hands, contribute to the degeneration of our race, are taken into consideration, they appear to afford an easy and satisfactory explanation of all those varieties, singular as they are, exhibited in this portion of the inhabitants of our globe, so different from any thing to be discovered in all the rest of their species.

I shall conclude my remarks upon this topic, by hazarding an argument in favour of the identity of our race, or, in other words, that we are all descendants of Adam, our great ori-

ginal stock, which I do not recollect to have seen touched on by any writer upon this subject, and yet it appears to me to carry along with it strong, if not conclusive evidence. It may be denominated the historical proof of the identity of the human race, as the others that have been alluded to may be termed geographical or physiological. It is the following: There are but two opinions that have been advanced in oposition to our doctrine that have the advantage of the slightest plausibility to recommend them, (if, indeed, we can justly bestow that honour upon these;) the one, that of Lord Kames, who supposes that for each portion of the human race, distinguished by varieties of aspect and figure, the creator formed a distinct progenitor; and that of those who imagine that the African is of the same kind or genus with the whites, but of an inferior species, a sort of connecting link between man and the ourang-outang. The opinion of Lord Kames is so unphilosophical and improbable, that few persons would feel inclined to give it a moment's serious examination, and should there be found any who do, they may see an example and masterly refutation of it, in the appendix to the work of our author on this point. Upon the hypothesis of his lordship, we must not only trace to a different original the Grecian and Roman head, the Simoide and Hindoo, the German and Italian, the English and French physiognomy, but dark haired and red haired people, those of the sanguine and brown complexion. In regard to the hypothesis, that the African negro, although of the same kind, is of an inferior species to the whites, which is the only opinion on this subject that has any verisimilitude to support it, I beg leave to fix the attention of the reader on the following remarks. Sacred, as well as profane history, leads us to the conclusion that that portion of our race who inhabit the temperate zones of Europe, Asia and America, were originally planted in the east, and from thence gradually diffused them-

selves throughout the whole earth. After the flood, Japhet and his posterity peopled the West; Shem and his offspring the eastern countries beyond Euphrates, and Ham and his family went to the south. Now is it to be believed, that in the various radiations of the race over the different countries of the globe, none of them extended themselves into Africa, or that part of it inhabited by the negro? Wherever modern circumnavigators have pushed their discoveries, whether into North or South America, to the isles of the Great Pacific or Indian Ocean, they have found the race of man, so industriously had he traversed the earth of which possession and dominion were bestowed on him, in the beginning, by his creator. And was it into the interior of Africa alone, a country so easily accessible to them, that the race did not penetrate? The previous occupation of the territory by an inferior species of animals would no more have excluded man from obtaining a settlement there, than the previous existence of the ape or ourang-outang. And if he did gain access into that country, and the moral and physical causes operating upon his system, did not reduce him to the form of an African as we now find him; why do we not discover him there as in the temperate zones? How happens it that the peculiar figure and hue of the negro, is confined to that country solely, if they be not the natural product of the climate and the manner of living of the inhabitants. In the first notice taken of these people by the ancients, we find that they exhibited the same appearance, as at present, and the skin of the Ethiopian becomes proverbial, while they seem to entertain no doubt that it is the effect of their intemperate climate, and consider this complexion as naturally belonging to those torrid regions. Now, if the negro be of an inferior species of the race, is it to be believed, that none of the higher species, amidst their infinite migrations through every region of the globe, would have been found intermixed among them,

and that a fact so important would have been recorded in history? To me it is utterly inconceivable. That the negro, therefore, is of the same species with the whites, possessing as they do all their corporeal and mental properties, appears to me to be a truth established by an evidence that amounts to the highest grade of moral certainty. In what manner nature operates to produce all those wonderful changes in their aspect and figure, so unlike the inhabitants of milder climates, will be found satisfactorily explained in the work of the philosopher of Princeton before alluded to, which is so much enriched by erudition, and does so much honour to the literature of our country.

In the further prosecution of that comparative view of man, in relation to other species of animals on this earth, the several objects to which he turns our attention are, his longevity, and his powers of continuing and multiplying his race, with reference, particularly, to the most successful means of augmenting the population of states; his social dispositions, and the various forms of association under which the species is inclined to collect itself; and, lastly, his susceptibility of improvement, which leads to the invention of arts and advancement of the sciences. The numbers of mankind, he informs us, will be most successfully augmented by instituting the laws of marriage; by establishing a wise system of property in the soil, which secures to each man his rights, whether consisting in the portion of land allotted to him, or in the free and entire use of the fruits of his own labour; the adopting of such territorial regulations as will tend to throw the land, as much as possible, into small and nearly equal divisions; the cultivation of frugal and simple manners among the people, and by the peculiar kind of provision which custom has rendered necessary in their diet. The forms of civil government, all of which spring out of the domestic state, are either simple or mixed. The simple

forms of association are, democracy, aristocracy, monarchy, and despotism; the mixed, are either republican or monarchical. On each of these topics, he enlarges with his usual clearness of comprehension, perspicuity of style, and happiness of illustration, and so successfully condenses within the compass of a few maxims, the substance of all that has been said by the most approved writers on these subjects, that this part of the work will be perused with peculiar interest and advantage by every American statesman and legislator.

In regarding man as susceptible of improvement, one of the first objects that strike our attention, and his chief distinction from the inferior animals, is the power of communicating and recording his thoughts, and increasing and correcting his knowledge by communication. Few things, proceeds our author, in the philosophy of human nature, merit more attention, than the means of imparting our thoughts to one another, by audible and visible signs. Our common perceptions, our most useful and our profoundest reflections, the finest emotions of the heart, and the most excursive flights of the imagination, and what is still more difficult, the most abstracted conceptions of the intellect, may, by this admirable contrivance, be made obvious to the senses of sight and hearing. In this, the infinite address of human reason is visible. The signs employed for the communication of thought may be divided into two classes; the natural, and the artificial or conventional. The natural signs are those looks, gestures, and tones of voice, which, without the assistance of words, taking hold merely of the sympathies of nature, call up in the minds of others the ideas, the emotions, and the desires which occupy our own. The artificial or conventional signs, are either vocal sounds or visible characters, and constitute language either spoken or written.

On the subject of language, two things especially merit the attention of the philosopher; in the first place, the diversity of languages existing in the world, and the similarity of structure which pervades all languages. Diversity of languages, he represents as the natural consequence of its original imperfection, and of the infinite migrations of mankind while society yet existed in its simplest state. He maintains, therefore, that the great variety of languages found among men, is an effect produced in the natural course of things, by the exercise of those powers of speech with which man is endowed by his creator, under the various circumstances in which he is placed; and that there is no necessity, in order to explain the phenomenon, to refer it to an immediate intervention of the power of the supreme being, miraculously confounding the languages of mankind at the tower of Babel. He embraces the opinion of those divines, who do not admit, that the confusion which took place at the tower of Babel, was a confusion of languages, but of sentiments, projects, designs, as the Hebrew word may be translated, and is more frequently translated in the Bible, than into the words tongue, or speech, which are the expressions used, in this case, in our version. And in favour of this interpretation of the scriptures, we beg leave to remark, that we cannot conceive how a confusion of languages could have been a cause adequate to produce the separation and dispersion of the projectors of the tower of Babel, since, notwithstanding this event, they might still have carried on, in conjunction, their great design; as we know that workmen of various languages, and nations, and tongues, can, without any difficulty, co-operate in the erection of any building however magnificent; whereas, a confusion of sentiments and opinions, leading to contentions and discord, would very naturally induce them to abandon their undertaking.

The next class of signs consists of those which represent, by visible characters, the sounds of which language is composed. At first, these would consist of such imperfect pictures or representations of visible objects, as a rude unpolished age would be capable of depicting. Moral and intellectual ideas could not be conveyed by this device. Yet, by means of certain analogies, which are supposed to subsist between sensible objects and correspondent emotions, intellectual conceptions, and moral feelings of the soul, on which figurative language is founded, the field of picturesque writing is greatly enlarged. Thus, an eagle has been made an emblem of victory, courage, elevation of mind; a lion, of strength, magnanimity, imperial rank; a dove, of mildness and innocence; a serpent, like those encompassing the wand of Mercury, of cunning, genius, eloquence; a circle, of endless duration; and a globe, of the whole material universe. Medals and allegorical pictures furnish innumerable examples of this analogical imagery; and the poets abound with a drapery which shows to what extent this species of writing might be carried. Before writing was known to the barbarous nations of Scythia, when one of their princes sent to Darius a pair of wings, a mouse, and an arrow, if he had been able to transmit a picture of objects, it would have equally served to convey to a proud king this formidable defiance; "that, unless he could fly in the air like a bird, or hide himself in the earth like a mouse, the Persian arrows would overtake him."

Painting, however, proving to be a cumbrous, unwieldly, and ambiguous mean of recording the growing annals of nations, and though continually increasing improvements of science and the arts, in order to render it a more practicable vehicle of knowledge, would be found susceptible of considerable abbreviations; the head of the eagle might be made to stand for the entire bird; the beak be used for the head; even the outline of these figures, and, finally a very small

portion of the outline, come to represent the whole. In the progress of abbreviation and improvement, it is not improbable that some minute curvature or complex inflexion, containing ever so remote a resemblance of some principal and characteristic part of the original figure, and ultimately no resemblance at all, might stand for the object itself. This point, in the progression, appears to offer a natural introduction to those verbal or idiomatic characters, an example of which still exists in the written language of China and some of the neighbouring nations, which stand, not so much for words, as for the objects or ideas expressed by those words. Thus written language is represented by our author, as advancing through the several stages of improvement, until it attained its ultimate perfection in the invention and use of alphabetical characters. These characters are only the analysis of the sounds used in oral discourse into their most simple elements, and of the modifications which those sounds receive by the approximations or contacts of the different parts of the organs of speech, expressed by visible symbols. After having considered man as a species, and taken a view of the properties which distinguish him from other species of animals, he proceeds to consider him in his individual capacity, and to explain the principles which enter into the composition of his nature, with reference chiefly to its moral destinations. In contemplating the nature of man, what first demands the attention of the philosopher, is its being a compound of body and spirit.

The question whether, as was held by the ancient Platonists and Pythagoreans, the rational and sensitive powers in man be seated in two totally distinct principles; the one the soul, the principle of vitality; the other the spirit, the principle of reason; or inhere in one simple essence, the soul, as maintained by most modern writers, he thinks of no importance, except to gratify a barren curiosity. He enters, how-

ever, at large into the merits of another question of higher moment, because it draws after it more important consequences; whether mind be essentially, or, in its primary principles, different from matter; and whether sensation and thought may not be the result of a certain organization of the body.

He infers the spiritual and immaterial nature of the soul, from the diversity, or rather opposition of its properties to those of the body, and concludes the chapter, by stating to his pupils, in brief but lucid terms, the ideal systems of Aristotle as revived by Locke, of Berkeley and Hume, and, finally, that by which they have all been supplanted, the system of Reid and the Scottish metaphysicians.

(*To be concluded in our next.*)

ART. II. *A* GUIDE *to* YOUNG SHEPHERDS; *or Facts and Observations on the Character and Value of* MERINO SHEEP: *with rules and precepts for their management, and the treatment of their Diseases, as well as of Sheep in general. Collected from the latest and best writers on these subjects, and confirmed by the experience of the Author and his friends. By* SAMUEL BARD, M. D. New-York, Collins and Co. 12mo. pp. 112. 1811.

A Complete Treatise on MERINOS, *and other Sheep, with plates. Recently published at Paris by order of the government: compiled by Mr.* TESSIER, *Inspector of the Rambouillet establishment, and others, in France. Translated from the French, and dedicated to the Agricultural Societies of the United States.* New-York, Economical School. 8vo. pp. 174. 1811.

IT is not intended here to enter into an examination of the particular merits of the above works, or to offer any abstract

of their contents. We introduce their titles for the purpose of calling all who may be concerned in the subject to which they relate, to give a close attention to the matters discussed in the volumes themselves. They are the result of extensive experience and observation; and will be found to be rich in important facts, which will be looked for in vain in any other publication, and to contain many details peculiarly interesting and instructive to the agriculturalists of the United States. On the *diseases* of sheep, which heretofore have not claimed that notice their importance demands, the pages of Doctor Bard and of M. Tessier, will be referred to again and again, and always with increased practical advantage.



J.E. West inv.t et del.t

College of Physicians and Surgeons of the University of the

STATE OF NEW-YORK.

DOMESTIC INTELLIGENCE.

HISTORICAL SKETCH

Of the ORIGIN, PROGRESS, *and* PRESENT STATE *of the* COLLEGE *of* PHYSICIANS *and* SURGEONS *of the* UNIVERSITY, NEW-YORK.

(With a View of the College.)

THE first attempt towards the formation of a medical school in the state of New-York was made in the year 1767, during the administration of His Excellency Sir HENRY MOORE and Lieutenant Governor CADWALLADER COLDEN.* Previous to this period, however, instruction had been afforded to the youth engaged in the study of medicine in New-York, and the first† essay in the United States, for the purpose of imparting anatomical knowledge, was made by Doctors JOHN BARD‡ and PETER MIDDLETON,§ two of the

* The name of Cadwallader Colden is memorable in the provincial annals of this country; and, not the least so, from the many charters of incorporation granted during his time for the establishment of literary and benevolent institutions. Himself an ardent and successful cultivator of science, he seems to have lost no opportunity for promoting its interests in the colonies. See Life of Colden, in American Medical and Philosophical Register, vol. i. p. 297—306.

† Hosack's Sketch of the Origin and Progress of the Medical Schools of New-York and Philadelphia, in Amer. Med. and Phil. Reg. vol. ii. p. 228.

‡ Dr. John Bard was born in Burlington, in New-Jersey, February, 1716, and died at his residence, Hyde Park, near Poughkeepsie, in 1799. He practised his profession in the city of New-York with great honour, and the most distinguished success, for more than fifty years, and was the author of an interesting account of the malignant pleurisy, which prevailed at Huntington, Long-Island, in the year 1749, besides some other papers. For further particulars, see a Sketch of his Life and Character, in the Amer. Med. and Phil. Reg. vol. i. p. 61—67.

§ Dr. Middleton was one of the very few medical men of this country, who, at that early day, were distinguished equally for various and profound learning, and

most distinguished practitioners of this city. In the following year, 1768, the Medical School was organized, under the direction and government of the College of the province, then called King's College, and a body of professors appointed to teach the several branches of medical science.

The learning and abilities united in the Medical School of that day, were, in the highest degree, honourable to the institution with which they were connected. Dr. SAMUEL CLOSSY* was chosen the Professor of *Anatomy*; Dr. JOHN JONES,† Professor of *Surgery*; Dr. PETER MIDDLETON, Professor of *Physiology and Pathology*; Dr. JAMES SMITH,‡ Professor of *Chemistry and Materia Medica*; Dr. JOHN V. B. TENNENT, Professor of *Midwifery*; and Dr.

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great professional talents. His *Medical Discourse*, or Historical Inquiry into the ancient and present state of Medicine, the substance of which was delivered at opening the Medical School of New-York, published in 1769, is an honourable specimen of his talents and attainments. He also wrote a letter on the Croup, addressed to Dr. Richard Bayley, a copy of which may be seen in the Medical Repository, vol. xiv.

* Dr. Samuel Clossy had, previous to his arrival in America, from Ireland, where he was born, attained a high degree of eminence in the medical profession, both as a practitioner, and as the author of an interesting volume on Morbid Anatomy, entitled, "Observations on some of the Diseases of the Human Body; chiefly taken from the Dissections of Morbid Bodies," published in London. 8vo, 1763. He was also a short time before chosen to the anatomical chair, the professor of natural philosophy in King's College. See the Life of Rev. Dr. Cooper, second President of King's College, in the Amer. Med. and Phil. Reg. vol. iii. p. 298—301.

† Dr. Jones was a native of the state of New-York, and born at Jamaica, Long Island, in 1729. He commenced the study of medicine in Philadelphia, and completed his education in Europe, where he attended the lectures of Hunter, M'Kenzie, and Pott, of London, and M. Petit and M. Le Dran, of Paris. He was deservedly considered an able teacher, and extended his reputation by the publication of a volume, entitled, "*Plain Remarks on Wounds and Fractures*," which appeared in 1775. He died in April, 1790, after a most useful and honourable life devoted to the advancement of his profession. See an Account of the Life of John Jones, M. D. in the Amer. Med. and Phil. Reg. vol. iii. p. 325—339.

‡ The brother of William Smith, Esq. the historian of New-York. He died in the city of New-York, in 1812.

Samuel Bard,* Professor of the *Theory and Practice of Physic.* Lectures on these several branches of medicine were regularly delivered by the above-mentioned gentlemen, and the Degree of Doctor of Medicine conferred by the College.†

About the same time, in consequence of a public address delivered by Dr. Samuel Bard, at the medical graduation, in 1769, a very important addition was made to the means of medical education then afforded by the establishment of the New-York Hospital. The necessity and usefulness of a public infirmary, to use the language of Dr. Middleton,‡ "were so warmly and pathetically set forth in that memorable discourse," that, upon the same day on which it was delivered, a subscription was commenced by His Excellency Sir Henry Moore, and the sum of eight hundred pounds sterling collected for that establishment. The corporation of the city, animated by the same public spirit and active benevolence, in a short time added three thousand pounds sterling to the first subscription, when the united amount was employed in laying the foundation of that valuable institution, now the pride of our city, and alike devoted to the purposes of humanity and the promotion of medical science.§

The Medical School of New-York, thus provided with learned and able professors, promised to be productive of the greatest advantages; but the revolutionary war occasioned a suspension of their labours; the professors and students

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* The present President of the College of Physicians and Surgeons, New-York.

† In his valuable Retrospect of the Eighteenth Century, Dr. Miller asserts, that no medical degrees had been conferred by the College previous to the revolutionary war. Notwithstanding the general accuracy of Dr. Miller, he, in this instance, is mistaken. A copy of an Inaugural Dissertation on the anthelmintic quality of the *Phaseolus Zuratensis Siliqua hirsuta*, or Cow-Itch, for the Medical Doctorate in King's College, by Samuel Kissam, M. B. and published in May, 1771, may be seen in the library of the New-York Historical Society.

‡ Medical Discourse, p. 60.

§ Hosack's Sketch.

were scattered, the college converted by the enemy into a military hospital, and the immediate design of the whole establishment frustrated.

After the peace of 1783, the former medical professors being separated by accident or death, never as a body were reinstated in their former situation in the College. In the following year, exertions were made for the revival of the Medical School of this city, and professorships created for that purpose. The individuals, however, who were appointed, either declined giving instruction altogether, or gave but imperfect courses, and the establishment consequently fell to the ground.

King's College at the close of the war underwent considerable alterations in its government, and received the name of Columbia College. William Samuel Johnson, Esq. L L. D. son of the first president, and a gentleman in every respect qualified to the station, was called to preside over it. The reputation of the College, as a school of arts, soon became deservedly great, and the Board of Trustees, under whose more immediate care it was placed, laudably attempted, in the year 1792, again to connect a medical establishment with it; thus forming two faculties, a faculty of arts and another of physic. At the head of the latter presided, for some time, Samuel Bard, M. D. as Dean. Among the professors who were appointed to deliver lectures on the different branches of medicine were several gentlemen of acknowledged talents and professional merit, and it was ardently hoped that the interests of science in general would be greatly promoted by their labours, and the medical character of the state soon acquire a high and extensive reputation.

The exertions of the Trustees of Columbia College in thus annexing a Medical School to that institution, were certainly in the highest degree deserving commendation; and

though the beneficial effects resulting from them have been but small and limited, and fallen far short of what was at first anticipated, yet it would be wanting in liberality to deny, that some service had been rendered the profession of medicine by its establishment. It appears from the records of Columbia College, that since 1792, the time when the medical faculty of that school was organized, to the year 1811, *thirty-four* students have completed their courses of study, and received the medical honours of that institution!

For reasons too obvious to need mention in this place, the Honourable the Regents of the University of New-York, in whom resides the exclusive power of instituting seminaries of learning, and of superintending the interests of literature and science throughout the state, determined in 1807 upon the establishment of a COLLEGE OF PHYSICIANS AND SURGEONS. The power to exercise this authority had been vested in them as early as 1791, by an act passed for that special purpose.* That so many years elapsed before that venerable body thought fit to form an institution to be exclusively devoted to the cultivation of medical science, appears to have risen from the existence of the Medical School attached to Columbia College, which it was hoped would have superseded the necessity of another medical establishment. Accordingly a charter for the purpose of establishing a College of Physicians and Surgeons in the city of New-York was granted, bearing date the 12th of March, 1807.

The establishment of the College of Physicians and Surgeons upon a broad foundation, under the patronage of the Regents of the University, and its sanction by the legislature, were circumstances viewed with the greatest satisfac-

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* The title of the act is as follows: "An Act to enable the Regents of the University to establish a College of Physicians and Surgeons within this state," passed the 24th March, 1791.

tion, and afforded just cause of congratulation to the friends of science throughout the state. That the high expectations which were entertained of the benefits that would flow to the community from its establishment were well founded, the history of the College during the few years it has been in operation presents the most conclusive evidence.

Agreeably to the provision made by the Charter, the College was organized on the first Tuesday, the 5th, of May, 1807; when the following officers were elected:

NICHOLAS ROMAYNE, M. D. *President.*
SAMUEL L. MITCHILL, M. D. *Vice President.*
ARCHIBALD BRUCE, M. D. *Registrar.*
ABRAHAM BROWER, Physician, *Treasurer.*

CENSORS.

EDWARD MILLER, M. D. DAVID HOSACK, M. D. ALEXANDER SHELDON, WILLIAM LIVINGSTON, WILLIAM JAMES M'NEVEN, M. D. HENRY VAN SOLINGEN, M. D. WILLIAM WHEELER, J. D. GILLESPIE, J. E. R. BIRCH, JAMES G. GRAHAM, BENJAMIN DE WITT, M. D. FELIX PASCALIS, and ALEXANDER HOSACK, M. D.

The following Professorships and Professors were constituted and appointed by the Regents of the University:

Practice of Physic, EDWARD MILLER, M. D.
Chemistry, SAMUEL L. MITCHILL, M. D.
Botany and Materia Medica, DAVID HOSACK, M. D.
Institutes of Medicine, BENJAMIN DE WITT, M. D.

For the purpose of forming a complete system of instruction in the several branches of Medicine, the College deemed it necessary to exercise the power, delegated to them by charter, of appointing lecturers on those departments of science which were unprovided with professors. They accordingly appointed Dr. NICHOLAS ROMAYNE and Dr. JOHN

Augustine Smith, Lecturers on *Anatomy*, Dr. Benjamin De Witt, Lecturer on *Chemistry*,* Dr. David Hosack, Lecturer on *Surgery* and *Midwifery*, and Dr. Edward Miller, Lecturer on *Clinical Medicine*.

In order to conduct with greater facility the various minute details of business in the College, a *Senatus Academicus* was organized, consisting of the President, Vice President, Professors, Lecturers, Registrar, and Treasurer.

The College, thus provided with Professors and Lecturers on all the branches of medical science, procured a commodious building situated in Robinson-street, a central part of the city, where apartments were fitted up for the accommodation both of the teachers and students. Some progress was made in the formation of an Anatomical Museum, a Chemical Laboratory, and a Cabinet of Minerals. The Botanic Garden founded by Dr. Hosack, the Professor of Botany and Materia Medica, was also eminently calculated for the purpose of instruction in those departments of knowledge

On the 7th of November following, the business of the College commenced, and full and satisfactory courses of instruction were delivered on all the branches of medicine, by the united labours of the professors appointed by the Regents of the University, and the Lecturers chosen by the College. In addition to this, it is proper to mention, that the Governors of the New-York Hospital made such arrangements with the Professor of the Practice of Physic as enabled him to deliver a course of Clinical Lectures in that extensive charity ; and that Dr. M'Neven, a member of the College, and then one of the Physicians of the New-York Alms House, gave to the students of medicine a course of

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* In the absence of Dr. Mitchill, the professor of this branch, who had to attend during that session at the general government as Senator of the United States.

Clinical Instruction on the cases that occurred in that institution. The industry with which the teachers of the New School devoted themselves to their respective collegiate duties was unremitted; and the ability and success with which they fulfilled the important stations assigned them was such, that the legislature, at their next session, in November 1808, made the liberal appropriation of twenty thousand dollars for the benefit of the College. The whole number of students who resorted to the institution the first year was fifty-three.

The College being instituted on an extensive plan, and under the immediate superintendance of the Regents of the University and the patronage of the state, the liberal grant of the legislature enabled them to purchase a building, situated in Pearl-street, better accommodated for their purpose, and to make such additions to the institution as might increase the advantages of instruction in the various branches of Medical Science. During the recess of the College, Dr. SMITH, formerly Lecturer, was approinted Professor of *Anatomy* and *Surgery*, Dr. MITCHILL, Professor of *Natural History*, Dr. DE WITT, Professor of *Chemistry*, Dr. M'NEVEN, Professor of *Obstetricks* and the *Diseases of Women and Children*, and the President, Professor of the *Institutes of Medicine*.

The second session of the College commenced in November, 1808, and continued four months. The Lectures were attended by *seventy-two* students, a greater number than had ever before resorted to a similar institution for medical instruction in this city.

The principal improvements made in the College the ensuing year, related to the departments of Anatomy and Natural History. The Anatomical Museum was considerably enlarged by many valuable preparations, and the Cabinet of Natural History and Mineralogy received many additions illus-

trative of the geological constitution and mineralogical resources of the United States. Dr. A. Bruce was elected the Professor of *Materia Medica* and *Mineralogy*. Lectures were given on all the branches of medical science by the several professors, and clinical practice at the Hospital by Dr. Miller. The third session of the College was attended by seventy-three students from different parts of New-York, and from other states in the union.

The success of the College of Physicians and Surgeons during the first three years of their establishment, exceeded the most sanguine expectations, and gave the fullest evidence of the numerous advantages which the city of New-York possesses for a great medical school. Certain misunderstandings, however, having taken place between the president and the professors, the rapid progress of the College in its importance and usefulness received a temporary check, and its brilliant prospects were for a season overcast. From a want of unanimity among the professors, lectures on only some of the branches of medicine were delivered, and the pupils consequently were reduced to about one third the former number.

The Regents of the University, upon receiving information of the dissensions which had arisen in the College, and which it was feared would materially retard the advancement of the institution, with the same laudable zeal for the promotion of medical science with which they had originally organized the establishment, immediately adopted measures for ascertaining the cause of the mischief, and for the removal of every impediment to its prosperity. A committee, consisting of the honourable Chief Justice Kent, Judge Spencer, and Judge Smith, was appointed to inquire into the nature of the misunderstanding, and to report upon the same. The report was as follows:

At a meeting of the Regents of the University, held pursuant to adjournment, in the Senate Chamber, on the first of April, 1811:

The committee to whom was referred several papers relative to the state of the College of Physicians and Surgeons in the city of New-York, report, that unfortunate misunderstandings have taken place between several professors of that institution, which have already materially impeded its operations, and unless something effectual be done by the regents, it will become degraded in the estimation of the public, and its usefulness will be inevitably destroyed.

The committee have forborne to trace and bring to light the conduct of individuals, because in their opinion it would be both useless and invidious.

Propositions have been made to the committee to re-model the institution, with a view of rendering its operation more simple, and of introducing into it several of the Professors of the Medical School in Columbia College, and other eminent and distinguished individuals: this proposition has been viewed by the committee in the most favourable light, as it may extinguish the feuds existing among the present Professors of the College of Physicians and Surgeons, and as it will, in all probability, be the means of uniting the two schools.

The latter appears an object of the first importance, in as much as it will assemble, in one institution, a splendid collection of medical and surgical talents, and as it cannot fail to merit and receive the patronage and encouragement of the legislature.

It is unnecessary for the committee to attempt to display the important advantages to the state which a well organized Medical School in the city of New-York must afford; its hospital, and the subjects furnished by the state prison, without the violation of law, present a field for the acquisition of medical and surgical knowledge unrivalled in the United States, and it is only requisite to establish an institution, under the fostering care of the legislature, in which shall be united the best talents, and to secure these advantages to the state.

Under these impressions, the committee beg leave to report an alteration of the charter of the College of Physicians and Surgeons, and to propose a new list of officers and professors, which alteration is as follows, to wit:

By the Regents of the University of the State of New-York.

WHEREAS we have reserved to ourselves the right to alter and modify our ordinances for establishing a College of Physicians and Surgeons in New-York; therefore,

Be it ordained, That all the corporate rights, privileges, powers, and immunities granted by us to the said College of Physicians and Surgeons, to the Trustees or Members thereof, and to the Senatus Academicus and Censors thereof, shall hereafter be exclusively vested in, and exercised by the Trustees of the said College of Physicians and Surgeons, to be appointed from time to time by us or our successors. And the said Trustees shall do and perform all matters and things which the said College of Physicians and Surgeons, the Trustees or Members thereof, and the Senatus Academicus and Censors thereof, are authorized and required to do and perform.

And be it further ordained, That the President, Vice President, Professors, and Treasurer of the said College, for the time being, and such other persons as we, or our successors, may hereafter appoint, shall be the Trustees of the said College, provided the whole number of the said trustees shall not, at any time, be more than twenty-five.

And be it further ordained, That the President or Vice President, or any three of the Trustees, shall have power, at any time, to call a meeting of the said Trustees, by giving at least three days previous notice of the time and place of holding said meeting. And five of the said Trustees (of which the President, or in his absence, the Vice President, shall be one) shall be a quorum for the transaction of business.

And be it further ordained, That the Trustees and Members of the said College, who are not constituted Trustees by this supplementary charter, shall be hereafter fellows or members thereof, and

that the Trustees shall have power to elect fellows or members of the said college, who shall at all times have the privilege of attending all the public lectures and other courses of instruction, delivered by the Professors in the said College; and who shall also have the privilege of visiting and inspecting the Anatomical Museum, the Botanic Garden, the Cabinets of Mineralogy and Natural History, and the Library of the said College, under such regulations as the Trustees shall prescribe for that purpose.

And be it further ordained, That reserving to ourselves and our successors, Regents of the University, the power of making such other grants or ordinances as may be necessary or useful for the said College, we finally order, that this ordinance shall form part of the charter of the said College of Physicians and Surgeons in the city of New-York. And we do hereby revoke and annul such parts of our previous grants and ordinances as are contrary to, or inconsistent with, the present ordinance."

The above extracts from the proceeding of the Regents of the University, supersede the necessity of any remarks on the subject to which they relate. The changes proposed to be made both in the officers and in the government of the College, were such as manifested equally a regard to the rights of other establishments, and the solicitude of the Regents for the welfare of that which they had founded and cherished.

Though their laudable designs were for a while, in a partial degree, protracted, on account of the conduct of some gentlemen, in relation to the professorships with which they were honoured, yet such arrangements were adopted by the Board of Trustees, now created according to the new Charter, that the various courses of instruction delivered by the professors formed a complete system of medical education.

Upon the reorganization of the College, the following gentlemen accepted the stations to which they were elected on

the 1st of April, 1811, by the unanimous resolve of the Honourable the Regents of the University:

Samuel Bard, M. D. *President.*

Benjamin De Witt, M. D. *Vice President.*

John Augustine Smith, *Professor of Anatomy, Surgery, and Physiology.*

David Hosack, M. D. *Professor of the Theory and Practice of Physic and Clinical Medicine.*

William James M'Neven, M. D. *Professor of Chemistry.*

Samuel L. Mitchell, M. D. *Professor of Natural History.*

John D. Jaques, *Treasurer.*

John W. Francis, *Registrar.*

During the same session, other measures particularly calculated to advance the interests of the New School of Medicine were adopted. The Elgin Botanic Garden, founded by Dr. Hosack, in the vicinity of this city, and which had been purchased by the legislature for the purpose of promoting medical science, was placed by them at the disposal of the Regents. That honourable board committed to the Trustees of the College of Physicians and Surgeons, the care of that extensive Botanical establishment, to be devoted to the use of the College, for the laudable purpose contemplated by the legislature. By this arrangement, the Botanic Garden became an important addition to the State Medical School, and affords more ample means of instruction in a highly interesting branch of education, than are enjoyed in any other Medical Seminary in the United States.* The le-

* The Elgin Botanic Garden is situated about three miles from the city, on the middle road between Bloomingdale and Kingsbridge. The ground, consisting of twenty acres, was purchased from the corporation of New-York, in 1801, by Dr. David Hosack, the founder of the establishment. The view, from the most elevated part, is variegated and extensive, and the soil itself of that di-

gislature also, during this session, made a further grant of five hundred dollars per annum for the benefit of the College.

The College having thus undergone such material alterations, and received such liberal aid from its founders and patrons, a new list of officers being chosen, and its internal government, formerly placed with the Censors and Senatus Academicus, being now vested in a board of Trustees composed of the President, Vice President, Professors, Treasurer, and other members of the medical profession, elected to the station, directed its attention with increased zeal to the immediate object of its establishment.

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versified nature, as to be particularly adapted to the cultivation of a great variety of vegetable productions. Immediately after the purchase, the proprietor had the grounds cleared and arranged in a manner the best adapted to the different kinds of vegetable, and planted agreeably to the most approved stile of ornamental gardening. A conservatory for the more hardy green-house plants was also built. As a primary object in this establishment was to collect and cultivate the native plants of this country, especially such as possess medicinal properties, there were in cultivation at the commencement of 1805, near fifteen hundred species of American plants, beside a considerable number of rare and valuable exotics. In 1806, important additions were made to the collection of plants from various parts of Europe, and from the East and West Indies. A second building for their preservation was erected, and the foundation for a third laid, which was completed in the following year. In the autumn of 1806 a *Catalogue* of the plants which had been collected, and which amounted to nearly two thousand, was published. Since that time, the Botanic Garden has been greatly improved. The buildings, which are erected on the most recent plan adopted in institutions of this kind, consist of three large and well constructed houses, exhibiting a front of one hundred and eighty feet. The greater part of the ground is brought in a state of high cultivation, and divided into various compartments, calculated for the instruction of the student of Botany and Medicine. The establishment is surrounded by a belt of forest trees and shrubs, and these again are enclosed by a stone wall two and a half feet in thickness, and seven feet in height. Upon the purchase of the establishment by the legislature, in 1810, the founder of the garden published a second edition, greatly enlaged, of the Catalogue of Plants cultivated there, arranged in alphabetical order, and embracing the generic and specific names of Linnæus, the synonyms of various authors, the popular appellations by which they are known, &c. For a more minute account, see a "*Statement of Facts relative to the establishment and progress of the Elgin Botanic Garden.*" *Hortus Elginensis, or a Catalogue of the Plants*, &c. second edition, published in 1811.

The services rendered the College, by the late measures adopted by the Regents and Legislature, soon became apparent. On the 15th of May, 1811, the first Medical Commencement in the institution was held, and the degree of Doctor in Medicine granted to eight gentlemen, who had previously undergone the necessary examinations prescribed by its laws, and publicly defended their respective inaugural dissertations. This was a greater number of degrees in medicine than was ever before granted at one time in this city, since the establishment of a Medical School in New-York. The honours of the College were publicly conferred by the President, Dr. SAMUEL BARD, in the presence of the Chanceller and Regents of the University, the Trustees and other officers of the institution.

Important additions were made this year to the Chemical department of the College, the laboratory was rebuilt, and the chemical lecture-room materially improved. The fifth session of the College commenced on the first Monday of November, 1811. The business of the College was opened by an elegant and appropriate address from the president,* and the several professors entered with becoming spirit upon the duties belonging to their respective departments. The course of *Anatomy, Surgery,* and *Physiology* was delivered by Professor JOHN AUGUSTINE SMITH; *Chemistry,* both in its relation to medicine and the arts, was taught by Professer M'NEVEN; and the course of instruction on the *Theory* and *Practice* of *Physic* and *Clinical Medicine,* and on *Midwifery* and the *Diseases* of *Women* and *Children,* by Professor HOSACK. To this last mentioned branch, Professor HOSACK had, a short time previous, been appointed Lecturer by the Board of Trustees. The several branches of *Natu-*

* A copy of this excellent production, delivered by Dr. Bard, may be seen in the Amer. Med. and Phil. Reg. vol. ii. p. 369—382.

ral History were taught by Professor MITCHILL: the geological and mineralogical parts of the course were illustrated by the rich cabinet of fossils attached to the College, and the illustrations in *Botany* given at the State Botanic Garden. Lectures on the *Materia Medica* were delivered by the Vice President, Dr. DE WITT. The exertions of the Professors in their several branches of instruction were unremitted, and deserving the highest commendation: the result of their labours was highly advantageous and satisfactory to their pupils. On the practice of physic alone, upwards of one hundred lectures were given during the session by the professor of that branch.

At the commencement held on the first Tuesday in May following, the time appointed, twenty gentlemen received from the hands of the president the degree of Doctor in Medicine, eleven of whom had been regular students of the institution.

It is highly gratifying to observe the language in which the Regents of the University expressed themselves, when speaking of the condition of the College at this time:

"They view (says the committee to whom was referred the business of the College) with satisfaction the advancement of the College to a greater degree of prosperity than it has at any time heretofore enjoyed. The names of the students reported, as attending the several classes, are eighty-four in number, which is a flattering indication of the continued progress of this Medical School. The President and Professors appear to have made great exertions to promote its welfare and permanent success; and their zeal for the cultivation of medical science merits the approbation of the Regents.

"The chemical and anatomical professorships, as they are attended with much expense to the incumbents, deserve, in the opinion of your committee, some aid and support from the Regents; and it is proposed that the annuity of five hundred dollars, lately

granted by the legislature for the use of the college, should be appropriated for this necessary and important object."

In their annual report to the legislature, dated on the 27th of May, 1812, they also observe:

"The organization of the College of Physicians and Surgeons has been improved, and it now presents a fair prospect of speedily rising to a state of usefulness and celebrity, such as may be justly expected from the importance of the community in which it is situated, and the government under whose auspices it has been erected.

"A gentleman universally acknowledged among the first in the medical profession in America, has consented to be placed at the head of it, and professors of the best talents have been procured to deliver instruction in it."

The board of trustees of the College could not forbear to tender to their professional brethren their congratulations upon the successful establishment of the institution, and the salutary effects which resulted from its re-organization. This they did in their circular address of September, 1812, in which they briefly stated the flourishing condition of the College, and, at the same time, announced the several courses of Lectures intended to be delivered during the ensuing session.

The *sixth* session of the College commenced at the usual time, in November, 1812, and complete courses of Lectures on *Anatomy*, *Surgery*, and *Physiology*; on the *Theory* and *Practice* of *Physic* and *Clinical Medicine*; on *Obstetrics*, and the *Diseases* of *Women* and *Children*; and on *Chemistry*, were delivered by the respective professors of these branches. Arrangements having been made by the Professor of *Natural History* for delivering instruction to his class at a different season, the Lectures on *Geology*, *Mineralogy*, *Botany*, and *Zoology*, were given by Professor MITCHILL in the en-

suing spring. Sixty-one Lectures were delivered by the Professor of Natural History on these branches of education.

On the first Tuesday in May, 1813, the degree of Doctor in Medicine was conferred on five candidates, who had completed their education in the College, and to whom the Regents of the University had granted that honour.

The preceding sketch contains a concise and faithful relation of the principal circumstances connected with the origin and progress of the College of Physicians and Surgeons of New-York. It was considered unnecessary to offer a more minute detail, as the public at large would feel little interest in dwelling upon particulars of this kind; and it was deemed inexpedient to bring to light the transactions of individuals, who, instigated by disappointed ambition, or envious of the condition of the College, were not wanting in devising means to destroy its prospects, or to add to the many difficulties unavoidably connected with the organization of an institution of this nature. It has always been observed, that establishments for the promotion of science, like other associated bodies, have their intervals of languor as well as their periods of vigour and activity.

The College, having successfully encountered the evils which it had originally to contend with, it is believed, now stands on a foundation too firm to be shaken. Its re-organization in the year 1811, by the honourable the Regents of the University, has proved as salutary in its effects as the most sanguine could have promised. Though three years have not elapsed since that event, yet, so successfully have the labours of the College been directed, that those who have completed their education under its care, and have received its medical degrees, nearly equal, in point of number, all who before that time had received the same honour in this state. The Inaugural Dissertations published by the graduates of the University are also, for the most

part, highly honourable to the talents and acquirements of their respective authors, and reflect credit on the institution whence they received their education.

The present flourishing condition of the state Medical School cannot but be viewed with peculiar satisfaction by every friend of science and humanity; and the Board of Trustees, moreover, deeming themselves fully warranted on account of the munificent patronage of the legislature, and the laudable zeal of the Regents of the University, to augment the means of medical education afforded by the College, have recently adopted measures for that purpose. In pursuance of this object, they have appropriated a considerable part of their funds to the purchase of ground as a permanent situation for the College, and are engaged in completing an elegant and commodious edifice, in all respects commensurate with the increasing character and importance of the institution. The Board of Trustees have made such arrangements as will secure the completion of the work in due season, in order that the several professors may enter upon their respective duties at the usual time, the first Monday in November. Additional provision has lately been made to the anatomical and chemical departments of the College. It may also be proper here to state, that, at the close of the last session of the College, the Trustees appointed JOHN W. FRANCIS, M. D. Lecturer on the *Institutes of Medicine* and the *Materia Medica.*

When the advantages which New-York possesses for a great medical establishment are considered; advantages, arising from its natural situation; its extensive population, now nearly equal to most of the capitals of Europe; its large and well endowed hospital and other public charities; its botanic garden; its well organized Medical College, and the extensive system of education which it embraces; and when it is further considered, that these advantages are in-

creased by the munificent patronage of the state, it is not too much to say, that, in the means of instruction, the College of Physicians and Surgeons is second to no similar institution in the United States.

OFFICERS, &c. *of the* COLLEGE *of* PHYSICIANS *and* SURGEONS *of the University of the State of New-York*, 1813.

SAMUEL BARD, M. D. *President.*

BENJAMIN DE WITT, M. D. *Vice President.*

JOHN AUGUSTINE SMITH, M. D. *Professor of Anatomy, Surgery, and Physiology.*

DAVID HOSACK, M. D. *Professor of the Theory and Practice of Physic and Clinical Medicine, and Lecturer on Midwifery and the Diseases of Women and Children.*

WILLIAM JAMES M'NEVEN, M. D. *Professor of Chemistry.*

SAMUEL L. MITCHILL, M. D. *Professor of Natural History.*

JOHN W. FRANCIS, M. D. *Lecturer on the Institutes of Medicine and the Materia Medica.*

TRUSTEES.

SAMUEL BARD,	JOHN D. JAQUES,
BENJAMIN DE WITT,	THOMAS ADDIS EMMET,
JOHN AUGUSTINE SMITH,	JOSEPH BLOODGOOD,
DAVID HOSACK,	ANDREW HUNT,
WILLIAM JAMES M'NEVEN,	ANDREW MORTON,
SAMUEL L. MITCHILL,	LYMAN SPALDING,

HUGH WILLIAMSON.

JOHN D. JAQUES, *Treasurer.*
JOHN W. FRANCIS, *Registrar.*

Syllabus *of the* Several Courses *of* Lectures *delivered in the* College *of* Physicians *and* Surgeons, *New-York.*

ANATOMY, SURGERY, AND PHYSIOLOGY.

The Lectures on *Anatomy, Surgery,* and *Physiology,* are embraced in one course, and are delivered by Professor John Augustine Smith, M. D. The objects of Dr. Smith's labours are, consequently, threefold; to illustrate the anatomy of the human body, to present such physiological views of each part as necessarily arise from considering its peculiar nature and functions, and thence to make a pointed application of this knowledge to the important duties of the surgeon. This latter object is always regarded by the professor as one of primary consideration, and he, therefore, enters upon the duties belonging to his department, by pointing out the value and necessity of a thorough knowledge of the principles of surgery, the means by which that science is to be acquired, and the mode in which it is to be practised, both as it regards the surgeon himself, his fellow practitioners, and the community at large. The professor next takes up the consideration of *life,* its essential principle, as it has been called, and the phenomena by which it is characterized, particularly in the different classes of animals and vegetables. The laws which govern animate matter, and the various opinions which have been entertained relative to it, are stated and examined. Upon this subject, every argument is produced which tends to prove the existence of a distinct vital principle. To this naturally succeeds observations upon *death,* an examination into the character of inorganic matter, or matter deprived of animation, the vari-

ous causes by which death is produced, and the effects resulting therefrom.

As the continuance of existence appears to depend more immediately upon the circulation of the blood, than upon any other process of the animal economy, Professor SMITH next enters upon a consideration of the manner in which this fluid is formed. He states the several opinions which have been maintained concerning it, and details its sensible and chemical qualities as afforded by the latest experiments. The importance of this fluid is still further evinced, when the professor points out its relation to *secretion*, and examines the various substances formed from it.

Doctor SMITH next enters upon the consideration of *bone*, as one of the substances produced from the blood : its formation and growth, its structure and peculiar character, are related: the individual bones are then described, with their connections and particular uses. After the bones, the *muscles* are next demonstrated : their peculiar organization is unfolded, and the nature of muscular motion explained from the phenomena which it exhibits. What is usually denominated the vascular system, is then treated of: the great importance of a thorough knowledge of the arteries being universally admitted, the professor minutely illustrates the structure and course of the blood vessels. The process of *digestion* and *assimilation* (including the anatomy of the *chylopoietic* and other *viscera*) is next taken up, and this part of anatomical instruction concluded with a view of the *lymphatic* and *absorbent* systems.

Professor SMITH next commences with a view of the *organs of sense;* having demonstrated the structure of the brain according to the manner adopted by the English, he proceeds to illustrate the anatomy of this organ agreeably to the improved method of the French. In his examination of the nervous system, Doctor SMITH endeavours, as far as

time will permit, to make his hearers acquainted with the most important facts which have been brought to light from the researches of philosophers on this subject.

In explaining the structure and functions of every part of the body, to the advantages afforded by oral instruction are added those which may be derived from a large collection of anatomical preparations and from dissections. The professor also frequently avails himself of the aid afforded by comparative anatomy, in order to illustrate particular subjects, and occasionally has recourse to preserved specimens of diseased parts for the purpose of more accurately unfolding the changes effected by morbid action.

From what has been already said, it will be understood that anatomy and physiology are intimately blended; the latter being deduced from the former. In like manner, the professor, while demonstrating the structure of a part, keeps constantly in view its functions, the diseases to which it is liable, and the operations and remedies they may require.

Correct anatomical knowledge being the basis of surgery, the professor dwells with minuteness upon those parts especially in which the skill of the surgeon is most required: Thus the anatomy and structure of the part is first particularly unfolded; the nature and seat of the diseases to which it is exposed explained; ample directions given for the manner of conducting the operation required; and the principles of surgery still further exemplified by performing the operation in the presence of the class upon the dead body. The professor treats at length all those subjects which claim the attention of the naval and military surgeon.

This course of Lectures commences on the first Monday of November, and continues *daily* for four months.

THEORY AND PRACTICE OF PHYSIC AND CLINICAL MEDICINE.

The *Theory* and *Practice* of *Physic* and *Clinical Medicine*, are delivered in the same course of Lectures, by DAVID HOSACK, M. D. the Professor of those branches.

Introductory to the practical subjects which this course embraces, and for the benefit of those pupils who may be commencing, or may have recently entered upon the study of medicine, Dr. HOSACK commences by exhibiting a compendious view of the structure of the human body ; more especially directing the attention of his pupils to the various functions it performs in a state of health, including those appertaining to the mind as well as the body.

In this view, particular attention is given to those functions which physiologists have denominated the natural functions of the system. Under this head, the various excretions, both as regards their influence in health, as well as the changes they undergo by disease, receive that attention which their importance demands.

The causes of disease, whether inherent in the system, or produced by the operation of external agents, are next enumerated.

The influence of climate, soil, food, sleep, cloathing, exercise, both mental and bodily, the passions of the mind, the functions peculiar to the different sexes, the various trades and occupations of life, in as far as they are either directly or indirectly the sources of disease, are severally noticed in this part of the course : as the subject of climate embraces circumstances equally interesting to the philosopher and physician, particular attention is given to the influence which it exerts upon the bodily and intellectual powers of man. In connection with this discussion, due regard is also paid to the sensible and adventitious qualities of

the atmosphere, and their agency in the production of endemic and epidemic disorders. Dr. HOSACK next inquires how far the functions of the constitution possess in themselves the power of removing diseases, as ascribed to them by most of the ancient and by some modern physicians; and concludes the preliminary part of the course with an outline of that preparatory knowledge which it is necessary for the physician to possess when he approaches the bedside of the sick.

He next proceeds to a description of the various diseases to which the human frame is exposed, arranging the whole in such manner as he conceives best calculated to assist the student in acquiring a knowledge of the characters of each, the causes which produce them, and the means to be employed for their prevention and cure. With this view, Dr. HOSACK distributes diseases into the eight following classes:

1. *Febres*, (Fevers) embracing the various forms of
   Intermitting,
   Remitting, and
   Continued Fevers.

2. *Phlegmasiæ*, (Inflammations) containing all diseases of an inflammatory nature.

3. *Cutanei*, (diseases of the skin) in which all the cutaneous diseases are arranged agreeably to the orders adopted by Dr. Willan.

4. *Profluvia*, (discharges) including all hemorrhages, as well as the morbid discharges which take place from the excretory organs of the system.

5. *Suppressiones*, (suppressions) or those diseases which consist in a suppression or diminution of the natural evacuations.

6. *Neuroses*, (nervous diseases) embracing all those which more especially reside in the nervous system, including the various diseases of the mind as well as those of the body.

7 *Cachexiæ*, (vitiations) the diseases more peculiarly arising from a morbid condition of the fluids of the system; including those which arise from their redundance either general or partial, as the various forms of dropsy, and those disorders which proceed from a vitiated state of the circulating mass.

8. *Locales*, (local diseases) containing tumours, dislocations, wounds, ulcers, and other diseases usually denominated local.*

Having pointed out the objects and advantages of this nosological arrangement, the professor proceeds to delineate the various diseases which it comprehends.

The subject of fevers, which fall under the daily observation of every practitioner, and which derives peculiar importance from the epidemics with which the United States have been visited since the year 1791, receives especial notice in this course.

When describing the treatment of diseases, Dr. Hosack not only minutely details the remedies to be prescribed, their mode of operation, and the different stages in which they are severally indicated, but the *diet* and *regimen* of the sick, including all those circumstances which have an influence upon the character of diseases and which it is equally the duty of the physician to direct, are also embraced in this course of Lectures.

MIDWIFERY AND THE DISEASES OF WOMEN AND CHILDREN.

This course, as taught in the College of Physicians and Surgeons, not only embraces the delivery of women in childbed, but comprehends the diseases peculiar to pregnancy,

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* For a view of the details of Dr. Hosack's classification, see the Amer. Med. and Phil. Reg. vol. ii. p. 270. Its advantages will, on a future occasion, be pointed out by the author in a more extensive work on this subject.

those attendant upon parturition, those which succeed to delivery connected withthe puerperal state, and the diseases of early infancy, especially those which occur during the month. The lectures on this important branch of medical education, are also delivered (at a separate hour) by the Professor of the Theory and Practice of Physic.

Dr. Hosack commences this course with a description of the bones of the pelvis, noticing their form, situation, dimensions, connexions with each other, and the other parts of the body, including a comparative view of the dimensions and structure of the head of the fœtus ; at the same time illustrating, by an extensive collection of preparations, the various deformities of the pelvis, and their effects upon labour. He next proceeds to a description of the soft parts connected with the pelvis, pointing out their structure, relative situation, connexion, the changes which take place in consequence of pregnancy, the vessels which supply them and the nerves which are distributed upon them, necessary to be known to the accoucheur.

Having described the anatomical structure both of the external and internal organs of generation, he notices their various functions, the diseases to which they are liable, and the treatment they severally demand. The numerous diseases connected with menstruation, are particularly treated of in this part of the course.

The gravid uterus, embracing a view of the changes induced by impregnation ; the signs of conception ; the structure and growth of the ovum ; the circulation of the fœtus, and that which takes place between the mother and child, comes next under consideration. The changes produced in the system by pregnancy, the diseases attendant upon it, and their mode of treatment, including the premature expulsion of the fœtus, and the treatment of those accidents which are frequently attendant upon abortion, are then fully detailed.

In the second part of the course, the premonitory signs of labour, the changes which take place during the process of parturition, and the diseases it occasionally produces, are next enumerated.

The several stages and progress of a natural labour; the different classes of labours, the characteristic symptoms of each, and their peculiar treatment, are then minutely described and illustrated upon the machine.

The regimen, or management of women in child-bed, the diseases which are frequently attendant upon, or succeed to parturition, and the diseases of the new-born infant, constitute the third part of the course.

The pupils are then referred to the New-York Lying-In Hospital, and the Lying-In Ward of the Alms-House, where they enjoy abundant opportunities of exemplifying, at the bed-side, the principles they may have acquired.

The Lectures on the Theory and Practice of Physic are delivered *daily* throughout the session, and those on Midwifery, at a separate hour, *three* times a week.

CHEMISTRY.

The Course of Lectures on *Chemistry* is delivered by Professor WILLIAM JAMES M'NEVEN, M. D.

Chemistry may be taught either by proceeding from the consideration of simple bodies to that of the combinations which they form, or else by deducing analytically, from the compound body, the more simple elements of which it consists. The former of those methods has been generally preferred from the time that so many simple substances were developed by means of the modern improvements in this science. It is also the method followed by the professor of this college.

If compound bodies be first presented to the examination of the learner, his progress is continually interrupted by his ignorance of all their constituent principles, on which, however, their mutual action and phenomena depend. But such of them as have not been decomposed are, according to the just logic of chemistry, to be deemed elementary for the present; and, in the stage to which it is now advanced, a clear and accurate demonstration of their properties necessarily forms the basis of the science. By considering these properties, first separately, and next in combination, a knowledge is acquired of the most complicated phenomena, not only with most facility and precision, but also with the advantage of having constantly in our view the effects of proportion and temperature, those predominating agents of all chemical changes.

Influenced, doubtless, by such considerations, the professor of chemistry first deems it proper to point out the active powers impressed generally upon matter, and then discriminates and exemplifies the nature of chemical action. The laws of affinity are followed by those of repulsion, and the forms of this power in electricity, galvanism, caloric, light, receive all the consideration necessary for demonstrating its most important phenomena during the production of chemical combinations.

The most simple confineable substance, and at the same time the most powerful chemical agent, comes next under examination, and the student is made acquainted with oxygen. Conformably to the mode adopted in this course, are first shown the combinations of oxygen with simple inflammable substances, the newly-discovered metals being selected for the first example. The metals have a primary interest for the persons who chiefly frequent those lectures, and at the same time this subject connects the finest discoveries of the moderns with the most improved part of ancient chemistry.

But a principal motive with the professor for the early introduction of this part of the matter of his lectures, and the adoption of this arrangement, arises from its reserving a great portion of the interest of pneumatic experiments to be diffused over the remoter parts of his course, when, perhaps the application of his auditors begins to slacken, and they have most need of being amused while they are instructed.

The consideration of the newly-discovered metals necessarily brings on that of the alkalis and earths, but though it is shown that these are metallic oxydes, yet since they have strong peculiarities, and are extremely active in their chemical agencies, it is thought advisable to preserve in some measure the ancient distinction, and consider them as a separate order in their power of neutralizing acids, and forming saline compounds.

Ammonia is connected with the metallic oxydes by containing oxygen, and is strictly connected with the alkalis by its properties; at the same time that, from the nature of its compound base, it introduces the consideration of other simple substances. These are nitrogen and hydrogen, of which the examination naturally succeeds.

The union of oxygen with nitrogen forms atmospheric air, of which the chemical and physical properties are now investigated. A varied proportion of the same elements produces other important combinations, such as the nitrous oxyde and the nitric acid, &c. The constituent principles of the metallic, alkaline, and earthy nitrates having been hitherto examined, the combinations themselves are at this period easily understood.

The union of oxygen with hydrogen forms water, and water is again resolved into its elements by various processes of nature and art. These important phenomena are detailed; the nature of congelation, fluidity, vaporization, and latent heat is then fully developed.

The union of oxygen with carbone, sulphur, phosphorus, &c. is productive of an highly important class of acids, and these enter into an equally important order of combinations. They now find their place in a connected series.

After those acids of well known composition are placed the muriatic, the fluoric, and boracic acids, on the constitution of which there hang as yet some doubts and uncertainty. But in all cases their combination with the substances already known is exhibited to the student.

The chemical physiology of vegetables opens a different, a new, and a very interesting field, as well to the philosophical chemist as to the student of medicine. In this, which may be called the second part of the course, their proximate principles and combinations are duly considered.

The examination of animal substances is reserved to the latter part of these lectures. It takes up the varieties of animal matter, their chemical properties and combinations: It treats of those animal functions which may be illustrated by chemistry, and it concludes with the spontaneous changes which animal bodies undergo.

OF THE GENERAL AGENTS OF CHEMICAL ACTION.

Of Chemical Attraction, and the Laws of Chemical Changes.

Of Repulsion.—Electrical repulsion and attraction, and their relation to chemical changes; galvanic repulsion and attraction, and their relation to chemical changes; calorific repulsion; temperature and the instruments for measuring it; expansion by caloric; specific caloric of bodies; quantity of caloric evolved by combustion; the motion and communication of caloric; the temperature of the atmosphere.

Of Light, and its operation in producing chemical changes.

Of Oxygen, and its combination with simple inflammable bodies.—1st. *With the metals that produce alkalis.*

With Potassium.—Methods of obtaining potassium; properties of potassium; hydrat of potassa; subcarbonate of potassa; methods of obtaining the hydrat and subcarbonate; experimental proofs of the properties of potassium and potasia.

With Sodium.—Methods of obtaining sodium; properties of sodium; pure soda; hydrat of soda; oxyde of sodium; subcarbonate of soda and their properties.

2d. *The combination of oxygen with the metals that produce alkaline earths.*

With Barium.—Methods of obtaining barium; baryta and hydrat of baryta; methods of obtaining hydrat of baryta; salts of baryta; barytic mixtures.

With Calcium.—Methods of obtaining calcium; properties of calcia and hydrat of calcia; causticity; preparation of mortar and cements; calcareous mixtures.

With Magnesium.—Method of obtaining magnesia; properties of magnesia; salts of magnesia; magnesian mixtures.

With Aluminum.—Method of obtaining alumina; properties of alumina; gems, pottery, porcelain, chinaware; aluminous mixtures.

With Silicum.—Method of obtaining silica; properties of silica; glass; silicious mixtures.

With Strontium.

With Zircanium.

With Ittrium.

With Glucinum.

3d. *Of the combination of oxygen with the metals that produce oxydes.*

Oxyde of Manganese, gray, black.—Mineralogical history of manganese; analysis of the ores of manganese; properties and uses of the oxyde of manganese; method of obtaining manganese.

Oxyde of Zinc, calamine.—Mineralogical history of zinc; analysis of ores of zinc; methods of obtaining zinc; properties and economic uses of zinc; medicinal uses of the oxyde and salts of zinc.

Oxyde of Tin, tin stone, wood-tin ore.—Mineralogical history of tin; analysis of ores of tin; method of obtaining tin; properties and economic uses of tin; medicinal uses of tin.

Oxyde of Iron; magnetic iron stone, magnetical pyrites, loadstone, specular iron ore, hematites.—Mineralogical history of iron; sulphurets of iron; carburets of iron; argillaceous iron ores; analysis of ores of iron; properties of iron; properties of steel; method of converting iron into steel; economic uses of iron and steel; medicinal uses and preparations of iron.

Oxyde of Copper, mountain blue.—Mineralogical history of copper; analysis of ores of copper; properties of copper; economic uses of copper; medicinal preparations and salts of copper.

Oxyde of Lead, red-lead ore.—Mineralogical history of lead; analysis of ores of lead; method of obtaining lead; properties of lead; medicinal preparations of lead.

Oxyde of Antimony, the gray ore.—Mineralogical history of antimony; analysis of ores of antimony; properties of antimony; medicinal preparations of antimony.

Oxyde of Bismuth, bismuth ochre.—Mineralogical history of bismuth; analysis of ores of bismuth; properties of bismuth; medicinal preparations of bismuth.

Oxyde of Cobalt, black cobalt ore.—Mineralogical history of cobalt; analysis of ores of cobalt; properties of cobalt; economic uses of cobalt.

Oxyde of Mercury, native.—Mineralogical history of mercury; analysis of ores of mercury; properties of mercury;

medicinal preparations of mercury; method of detecting mercurial poisons; economic uses of mercury.

Oxyde of Silver, calciform silver ore.—Mineralogical history of silver; extraction of silver; analysis of ores of silver; properties of silver; silvering; plating; method of separating silver from copper; medicinal preparations of silver.

Gold.—Mineralogical history of gold; analysis of ores of gold; properties of gold; gilding; plating; cupellation; medicinal preparations of gold.

Platina.—Mineralogical history of platina; properties and uses of platina; method of obtaining pure platina.

Tellurium.—Mineralogical history of, &c. The same of *Nickel; Uranium; Osmium; Tungsten; Titanium; Columbium; Cerium; Palladium; Iridium; Rhodium.*

4th. Of the combination of oxygen with the metals that produce acids.

Oxyde of Arsenic, native.—Mineralogical history of arsenic; analysis of ores of arsenic; properties of arsenic; method of detecting arsenical poison; medicinal preparations of arsenic.

Oxyde of Chrome.—Mineralogical history of chrome; analysis of ores of chrome; properties of chrome; chromates.

Molybdena, &c.

Of Oxygen in combination with hydrogen and nitrogen.

Ammonia.—Methods of obtaining ammonia; properties of ammonia.

Of Oxygen in combination with *nitrogen only.*—Atmospheric air; analysis of; its chemical and physical properties; nitrous gas; nitrous oxyde; nitric acid; eudiometry; nitrates.

Of Oxygen with hydrogen only.—Water, in the state of ice; in the fluid state; in the state of gas.

Of Oxygen in combination with *carbon.*—Carbonic oxyde: carbonic acid; carbonates.

Of Oxygen in combination with *sulphur.*—Sulphurous oxyde; sulphurous acid; sulphuric acid; sulphates; sulphites; sulphurets; sulphuric æther.

Of Oxygen in combination with *phosphorus.*—Phosphorus acid; phosphoric acid; phosphates; phosphites; phosphurets.

Of Hydrogen, and its combination with simple inflammables.

Of Hydrogen in combination with *carbon.*—Olefiant gas; carburated hydrogen.

Of Hydrogen in combination with *sulphur.*—Sulphurated hydrogen; hydrosulphurets; supersulphurated hydrogen, and its compounds.

Of Hydrogen in combination with *phosphorus.*—Phosphorated hydrogen gas.

Of Muriatic Acid.—Muriates; metallic, alkaline, earthy.

Of Chlorine.—Hyperoxymuriates; alkaline, earthy, bleaching.

Of Fluoric Acid.—Fluates; metallic, akaline, earthy.

Of Boracic Acid.—Borates; metallic, alkaline, earthy.

Of the Chemical Physiology of Vegetables.

Of Vegetation.—Germination; the food of plants; motion of the sap; functions of the leaves.

Of the proximate principles of Vegetables.—Of gum; of fecula; sugar; honey; gluten; gelatine; caoutchouc; birdlime; wax; fixed oil; volatile oil; camphor; resin; gum-resin; balsam; extract.

Of Tannin.—Preparation of tannin; combination of tannin with gelatin;—tanning;—with alkalis; with earths; with oxydes; with acids; species of tannin.

Of Gallic Acid.—Preparation of gallic acid; properties of gallic acid; gallates.

Of Prussic Acid.—Preparation of prussic acid; properties of prussic acid; prussiates.

Of Citric Acid.—Preparation of citric acid; properties of citrid acid; citrates.

Of Malic Acid.—Preparation of malic acid; properties of malic acid; malates.

Of Oxalic Acid.—Preparation of oxalic acid; properties of oxalic acid; oxalates.

Of Tartaric Acid.—Preparation of tartaric acid; properties of tartaric acid; tartrites.

Of Acetic Acid.—Preparation of acetic acid; properties of acetic acid; medicated vinegars; acetites; acetic æther.

Of the formation of Animal Substances, and of Animal Products.—Of the blood; of the chyle; of the lymph, saliva, pancreatic and gastric fluids; of the bile and biliary calculi; of urine, urea, and urinary calculi; of fibrin; of skin, celular fibre, membrane, tendon, ligament, cartilage, bone, and shell.

Of the Functions of Animals.—Of digestion; of respiration; of assimilation; of the decomposition of animal bodies.

The Lectures on Chemistry are delivered four times a week throughout the session.

NATURAL HISTORY.

The subjects of this extensive course are divided by Professor Mitchill into distinct heads, after the following arrangement: He begins with the history of the earth, as a planet or integrant portion of the universe. I. It is divided into four parts: 1. *Cosmogony*, embracing the doctrines relative to the origin of the world. 2. *Geognosy*, or the account of the changes it has undergone in the chaotic state,

during the deluge, and since that event. Its constituent parts viewed under five divisions ; (*a*) *Primœval*, or such as were formed at the creation, or deposited from chaos immediately after, such as syenite, topaz-rock, quartz-rock, primitive flint, slate granite, gneiss, micaceous slate, argillaceous slate, serpentine, with primitive lime-stone, gypsum, and trapp. (*b*) *Transition*, or such as were formed when a further subsidence from the original medley of things took place, of which, transition-lime-stone and trapp, gray wacke, flinty slate, and transition gypsum, are examples : (*c*) *Flat or secondary*, to wit, sand-stone, low stratified lime-stone, gypsum and trapp, rock-salt, chalk, and coal : (*d*) *Alluvial*, formed more recently still by settlement from water, constituting the bottoms of valleys and level spaces between mountains, as well as the chief constituents of widely extended plains. (*e*) *Volcanic*, or the products of subterraneous fire, comprehending lava, slag, ashes, scoriæ, &c. In this arrangement, he follows the system of the distinguished German, Professor WERNER. He is a firm Neptunian, and examines at great length, the operation of water in giving configuration of the globe. 3. *Mineralogical Chemistry*, or an explanation of the properties of matter, attractive and repulsive, by which its different forms and modifications are effected. 4. *Physical Geography*, or an account of the actual condition of the globe, as to land and water, mountain and valley, continent and island, mine and surface. This section of the course is denominated *Geology*.

II. The history of *light*, as the most copious of created existences, and occupying the widest space in the universe. It is considered as a body rendered fluid by means of heat or caloric, like other bodies, and like them, giving out its heat on its decomposition. A review is given of the modern discoveries by Bancroft, Herschell, Ritter, and Wollaston, rendering it necessary to enlarge and reform the doctrines

of Newton, and inclining him to the belief, that the sun-beam consists of two ingredients, *colour* and *caloric*. Hence is deduced a theory of colour and heat as evolved from light by its decomposition, and imparting to every thing its proper hue and temperature. White is considered a chemical, and black a mechanical assemblage of all colours; and Rumford's considerations on the black clothing, furs and skins of animals, and on the black coating of other bodies in relation to heat, are exhibited to strengthen this argument. The analogy between light and sound is traced, to show the doctrine embraced by some, that impulse or vibration may be of great efficacy in bringing about the phenomena of light. This part of the course is termed *Photology*.

III. Heat is next considered, and its natural history attempted. A great source of it is the sun-beam, or chemical compound of colour and light. Another copious source of it is the oxygenous fluid of the atmosphere, or phos-oxygenous gas as it ought to be called. If the sun-beam becomes associated with oxygen, it forms the compound, erroneously called oxygenous air. It is really a solution of oxygen in fluid light, and on the resolution of this compound into its constituent parts, heat, light, oxygen and colour come forth. After considering the mechanical and chemical theories of fire, a preference is given to Pictet's arrangement of the facts under four heads, to wit, the free, latent, specific, and fixed forms of heat. Its effects are considered as producing contraction, expansion, liquidity, fluidity, fusion, and as the great stimulus to vegetable and animal life. The plutonic hypothesis is examined and rejected. This branch of the course is called *Pyrology*.

IV. The history of water is the next subject of Professor Mitchill's discussion. It is the great agent in effecting the changes the earth has undergone. The proofs are stated of its having covered the mountains, and of its separation

from the materials with which it was anciently blended, forming thereby the stratification illustrated under the head of Geology. Reasons for supposing the waters of the globe to have undergone a diminution; 1. In the formation of crystalline bodies; 2. In the constitution of the atmosphere; 3. In the formation of plants; and, 4. In the organization of animals. By these processes, an immensity of the water which existed at the flood is converted into solid forms, and a correspondent shrinking of the ocean has ensued. In these natural and easy ways, is the problem solved, which the ingenious Jamieson gives up in despair, that is, what has become of the surplus water that once deludged the world? The primitive inundation having thus subsided, the question is examined, whether the quantity of water is yet diminishing, as some of the modern philosophers think; considerations are offered in favour of such a belief, in consequence whereof, preparation is making for the final consummation of terrestrial affairs by fire. Waters apparently rushed from the south, according to Kirwan's doctrine. Questionable whether water can be decomposed as the fashionable chemists think, and whether it is not an element, as the ancients and Priestley contended. It is divisible into three historical section. 1. Salt water, such as saline or briny fountains, the ocean, the Mediterranean, Euxine, Caspian, and Judean seas; and the Nitrian and Mexican lakes. 2. Fresh water, such as the fluid of rain, dew, snow, and hail; spring or fountain water; river water, and the liquid of the great American lakes, as well as of many more inland collections of water. 3. Mineral water, such as the acidulous springs of Ballstown, charged with carbonic acid; the sulphureous springs of Clifton, in Ontario county, exhaling hepatic gas, and deposing brimstone; the thermous springs of Lebanon, which are of a temperature fitting them for an exquisite bath; the chalybeate springs of many places in our granite coun-

try. These inquiries, with a multitude of explanations concerning tides, currents, alluvions, and solutions, are distinguished by the title of *Hydrology*.

V. The globe having been thus viewed, as to its geological structure, the effects wrought upon it by light, heat, and colours, and lastly, in respect to the alterations it has sustained by means of water, the next view taken of it relates to its atmosphere. The idea of Lavoisier is here adopted, that every thing which the heat of its surface can convert to air or gas, makes a portion of the sphere of vapours encircling our planet. The views of Professor MITCHILL, relative to the atmosphere, with a theory of the winds, and an abundance of other particulars, are summed up under the name of *Aerology*.

VI. *Mineralogy* is the sixth division of the subject, and comprehends the classification and particular description of those substances that were mentioned in a general and comprehensive way, under the head of *Geology*. On account of the very recent discoveries, which have enriched and ennobled science, Professor MITCHILL has found himself obliged to discard the quadruple arrangement of minerals, by Bergman, into earths, metals, salts, and inflammables. Although this distribution had received the respectable sanction of Cronstedt, Magellan, Kirwan, and the chief of the modern worthies who have cultivated an acquaintance with fossils, yet its incompatibility with the present state of facts and observations render it absolutely improper to adhere to it any longer. That fourfold classification, was the most scientific and luminous that had been thought of, and was well worthy of the fond reception it met with. But it is now time to change it for a better ; for one which is framed and erected on the actual relations of minerals, as now understood. The arrangement he proposes is grounded on his own views of this department of knowledge, and on the

penetrating discoveries of Professor Davy. The prominent features of these joint and concurring testimonies are, the relations which mineral, and especially metallic bodies, have to *Phlogiston*, and to *Oxygen:* to which may be added, their relations to *Sulphur*, to *each other*, and to *Acids*.

1. The first class comprehends minerals, as combined with phlogiston, (or hydrogen.) Among these are the metals in their *reduced state*, as it is termed; that is, the one in which they possess splendour, malleability, and ductility: sulphur, in its ordinary condition; coal, when affording flame as it consumes; phosphorus, when burning with blaze: among the metals, it is proper to observe, that potash, soda, ammoniac, lime, barytes, magnesia, alumine, and silex, are reckoned, as well as the substances heretofore ranked as metals.

2. In the second class are contained minerals, as combined with oxygen. All *metallic oxyds and acids* are comprehended in this division; such as those of lead, iron, &c. as commonly received, and likewise, the alkaline salts and earths, argillaceous and siliceous earths, &c. in their states wherein they commonly exist, making the principal and solid materials of the globe. Modern science has demonstrated that these are chiefly metallic oxyds. The oxyds of carbone come under this head; including all the modifications of incombustible coal.

3. Minerals united to sulphur, make the third class; constituting all manner of pyrital combinations; all sulphurs and sulphurets; and in short, every one of the numerous combinations, denominated *Ores*, by intervention of brimstone.

4. *Amalgams and Alloys* form the fourth class of mineral bodies. They comprehend all the mixtures of metallic substances with each other. Thus glass is an alloy of two metals, potash and flint; stone-ware an alloy of clay, flint, and iron, under other modifications; and the like applies to bricks,

tiles, and other mixtures, heretofore deemed earths, but now shown to be metals. All the alloys of the metals, as usually understood, such as the mixtures of gold and silver, &c. with copper, mercury &c. come under this head, of course.

5. Minerals, as related to acids, make a fifth class. Of these, the acetates of lead and copper, forming the saccharum saturni, and verdigris of the shops, are examples; as are also the sulphates of iron, zinc, lime, barytes, soda, potash, and in short the entire section of the salia acido-metallica.

VII. *Botany* is the next division of this course. It comprises all the vegetables which overspread the face of the earth, under two great aspects. 1. Their history as individuals of the animated creation, including their origin from seeds and germs, through the whole of their increase to their inflorescence and fructification, and the formation of seeds and germs again. This comprehends their anatomical, physiological, pathological, and economical character and uses. 2. Their Classification; which being explained according to the Sexual or Linnæan arrangement, is too well understood to be here enlarged upon. In his illustrations of this part of the course, the professor avails himself of the advantages afforded by the State Botanic Garden.

VIII. In his *Zoology*, Professor Mitchill follows the plan of Cuvier, as explained and detailed by Dumeril. The distribution of the animal race into the nine classes of Mammalia, birds, reptiles, fishes, molluscas, crustacea, insects, worms, and zoophytes, seemed preferable to any other, because it embraces both their anatomical structure and their external characters. For, by thus seizing all the points of resemblance which the outward form and inward organization afford, animals of similar natures may be grouped together; while by noting all the circumstances of discrimination, that external and internal marks present, the creatures of dissimilar configuration and appearance may be kept asunder.

In this copious and fertile field of discussion, the human race is considered. He distributes the single species, man, as descended from the first original pair, into six races: 1. The Caucasian or European. 2. Hyperborean or Laplander. 3. The Mongol or Tartar. 4. The American; that is, the South American. 5. The Malay or Philippine; and 6. The Ethiopian or Negro. As to the Aborigines of North America, he considers them as composed chiefly of two races: the Hyperborean, No. 2. which came in by the route of Greenland, and the arctic regions from the east: and of the Tartar, No. 3. which entered by the way of Alaska, from the west. And he supposes that the genuine American form and feature, are only to be found in the south.

IX. The ninth and last division of this course, is termed *Uranology*. As in the former sections, terrestrial objects are treated of at great length; so in this, it is intended to exhibit what is known of the Heavens. It is comprehended under three heads, to wit: 1. The history of the Copernican system; comprehending the sun, the planets, satellites, asteroids, and comets: 2. An account of the sidereal system, or of the fixed stars which constitute the celestial firmament, of worlds innumerable, distributed through immeasurable space, according to Herschell's researches: and, 3. The way in which stars were, among the pastoral tribes of Asia, parcelled into constellations; and particularly how, for the purpose of tracing and describing in a clearer manner the sun's course along the ecliptic, the zodiac was invented. Dr. MITCHILL concludes with the history of the twelve signs; and professes his endeavour to infuse in his discourses, as much as he possibly can, of the spirit which animates the writings of Ray, Derham, Smellie, Fontenelle, Pluche, and Saint Pierre.

The Lectures on Natural History, commence the beginning of May, and are delivered *daily* for nearly three months.

CHARTER OF THE COLLEGE.

WHEREAS since the establishment of the COLLEGE OF PHYSICIANS AND SURGEONS, of this state, by charter, dated March the twelfth, one thousand eight hundred and seven, it has been found necessary at several times to alter and amend the said charter: *And whereas* it has now become expedient for the better government of the said College to collect into one, the original and supplementary charters, and to amend the same so as to give greater stability and respectability to that institution; *Therefore be it ordained*, by virtue of the act, entitled, "An Act to enable the Regents of the University to establish a COLLEGE OF PHYSICIANS AND SURGEONS within this state," passed the 24th of March, 1791, and we do by these presents ordain, grant, and declare, That all such persons named in the original charter, who did, according to an ordinance passed by us the Regents of the University of the state of New-York on the 3d day of March, 1803, declare in writing, (on or before the first day of May, in the year 1808,) their acceptance of the appointment of member or trustee of the said College; and that they would each of them, to the best of their abilities, endeavour to promote the usefulness of the said College, and faithfully execute the duties required of them respectively as members or trustees of the said College, together with *Samuel Bard*, *Benjamin De Witt*, *John Augustine Smith*, *David Hosack*, *William James M'Neven*, *Samuel L. Mitchell*, *John D. Jaques*, *Thomas Addis Emmet*, *Lyman Spalding*, *Andrew Morton*, *Andrew Hunt*, and *Joseph Bloodgood*, be, and hereby are constituted a body corporate and politic, in fact and in name, by the name of the "COLLEGE OF PHYSICIANS AND SURGEONS in the city of New-York." And that they and their successors shall have perpetual succession, and by that name shall be in law capable to sue and be sued, plead, and be impleaded, answer and be answered unto, defend and be defended in all courts and places, and in all matters and causes whatsoever; and to purchase, take, hold, and enjoy, and have lands, tenements and hereditaments, and real estate in fee simple or for term of years, or lives, or any other manner whatsoever; and also goods, chattels, books, money and all other things of what na-

ture soever: *Provided always*, that such estate, as well real as personal, which the said College is and hereby are authorized to hold, shall not exceed the sum of one hundred and fifty thousand dollars, current money of this state; and that the members or trustees of the said College shall have a common seal, and may alter and renew the same at pleasure. *And be it further ordained*, granted, and declared, that *Samuel Bard*, *Benjamin De Witt*, *John Augustine Smith*, *David Hosack*, *William James M'Neven*, *Samuel L. Mitchill*, *John D. Jaques*, *Thomas Addis Emmet*, *Lyman Spalding*, *Andrew Morton*, *Andrew Hunt*, and *Joseph Bloodgood*, and such other persons as we or our successors may hereafter appoint, *provided* the whole number shall not at any time exceed twenty-five, shall be trustees of the said COLLEGE OF PHYSICIANS AND SURGEONS, and that a majority of their whole number at any time resident in the city of New-York, shall form a quorum for the transaction of business, and shall and may meet together on the first Tuesday in May, and on the first Tuesdays in August, November and February in every year, and that on the days of these anniversary and quarterly meetings, but at no other time, they, the said trustees, may enact such by-laws, rules and regulations relative to the affairs and property of the said College, and relative to the duties of their president, vice-president, professors, treasurer, registrar, and other members as they, or a majority of them so met at such annual or quarterly meetings, may think fit and proper: *Provided*, that such by-laws, rules and regulations be not contrary to, or inconsistent with the constitution and laws of this state or the United States; and such by-laws, rules, and regulations, having first received our consent and approbation, and confirmation, shall be and remain the by-laws, rules, and regulations by which the said College shall be governed, and shall not be annulled, abrogated, or repealed but by and with the consent of the majority of the trustees of the said College, and by and with the approbation of us the said Regents. And the Registrar of the said College shall provide a book in which he shall make an entry of all the resolutions and proceedings which may be had from time to time, and also the annual reports relative to the state of the treasury,

and all such other things as a majority of the trustees of the College assembled, shall think proper; to which any member of the College may at any time have recourse: and the same, together with all books, papers, and records which may be in the hands of the registrar, and be the property of the College, shall be delivered to his successor in office. And the treasurer of the said College shall receive and be accountable for all monies which shall come into his hands, and shall pay the same in such manner as may be directed by a majority of the board of trustees, convened at their anniversary or quarterly meetings, and by a warrant for that purpose signed by the president or vice-president. *And be it hereby further ordained*, granted, and declared by us, that the trustees of the said College shall, as far as they are able at all times, provide suitable apartments or lecturing rooms for all such professors as shall hereafter be appointed by us in and for the said College, which Professors shall have the stile and title of Professors of the University of the state of New-York, for the COLLEGE OF PHYSICIANS AND SURGEONS: and that all the members of the said College shall be privileged at all times to attend, inspect, and notice all lectures or other modes of teaching by Professors in the said College, appointed by us; and that in case of the death, or resignation of any professorship, or other vacancy in the said College, a majority of the trustees, at any of their meetings, may appoint lecturers in any branch of medicine, or of the sciences connected therewith, until such time as our pleasure be known respecting the same, or a professor be appointed by us. *And be it hereby further ordained*, granted, and declared, that the board of trustees of the said College, as well as the subordinate board of President and Professors, shall carry and put into effect all our ordinances respecting the said College, as well with respect to education as all other matters and things, and shall pay due attention to establishing and preserving, for the use of the said College, an anatomical museum, chemical apparatus, and botanical garden, and shall make an annual report to us in writing, or to the Chancellor of the University, in the month of January, in every year, respecting the funds and property of the said College, and all matters and things relative

to the said College and the Students and Professors thereof. *And be it further ordained*, That the President or Vice-President, or in the absence of both, the senior Professors, and any three of the trustees, may at any time call a meeting of the trustees of the said College for the transaction of ordinary business, by giving in writing, to each trustee, who shall be in the city of New-York, three days notice of the time and place of holding the said meeting; and that five of the said trustees so met, (of which the President, Vice-President, or senior Professor shall always be one,) shall be a quorum. *And be it further ordained*, That *Samuel Bard*, M. D. shall be President of the said College; and that *Benjamin De Witt*, M. D. shall be Vice-President; and that *John Augustine Smith*, M. D. shall be Professor of Anatomy, Surgery, and Physiology; and that *David Hosack*, M. D. shall be Professor of the Theory and Practice of Physic and Clinical Medicine; and that *William James M'Neven*, M. D. shall be Professor of Chemistry; and that *Samuel L. Mitchill*, M. D. shall be Professor of Natural History; and that *John D. Jaques*, shall be Treasurer; and that *John W. Francis*, M. D. shall be Registrar of the said College, and accordingly they are hereby respectively appointed to the stations and offices as annexed to their names. *And we do further ordain*, give, and grant to the said College, that we will constitute and appoint no new Professorship in the said College, or abrogate or annul any of the present Professorships, nor remove either of the Professors of the said College now appointed or to be hereafter appointed, until notice shall have been given to the board of trustees of such intended new appointment, or abrogation, or to the person intended to be removed, of such intended removal, at least one month before such intention shall be carried into effect. *And be it further ordained*, That it shall be the duty of the President and Professors of the University for the College of Physicians and Surgeons, at any ordinary meetings appointed for that express purpose, and of which meeting the trustees of the said College shall have notice and may attend, to examine all candidates for the degree of Doctor of Medicine in the said College, and to recommend from time to time such students as a majority of the trustees present shall deem qualified and worthy to receive the

degree of Doctor of Medicine. And the Regents do hereby give and grant to the said College, that they will take into consideration the propriety of granting diplomas, for conferring the degree of Doctor of Medicine upon such students as shall be so recommended, and to none other of the students of the said College. Finally, *We do ordain*, grant, and declare, that the said tustees, fellows, and members of the COLLEGE OF PHYSICIANS AND SURGEONS in the city of New-York, and their successors forever, shall enjoy all the corporate rights, privileges, and immunities which are hereby granted: And that the by-laws, ordinances, and regulations heretofore passed by us, and ordained, and which not having been repealed, and which are not repealed by this charter, but are now in force, shall continue to be the by-laws, ordinances, and regulations for the government of the said College, until they shall be repealed, or new ones ordained, according to the tenor and ordinances of this charter; and all other laws, ordinances, and regulations, and all former charters or supplementary charters granted by us to the said COLLEGE OF PHYSICIANS AND SURGEONS are hereby repealed.

And be it further ordained, That the members of the said College, who are not by this charter constituted trustees, shall be Fellows, and that the trustees shall have power to elect fellows or members of the said College, who shall at all times have the privilege of attending all the public lectures and other courses of instruction delivered by the Professors in the said College, and who shall also have the privilege of visiting and inspecting the anatomical museum, the botanic garden, the cabinets of mineralogy and natural history and the library of the said College, under such regulations as the trustees shall prescribe for that purpose.

IN testimony whereof, we have caused our common seal to be affixed to these presents, the fourth day of June, in the year of our Lord one thousand eight hundred and twelve.

(Signed) DANIEL D. TOMPKINS,
Chancellor of the University.

FR. BLOODGOOD, *Secretary.*

Medical Commencement in the University of New-York.

The annual Medical Commencement for the purpose of conferring the degree of Doctor in Medicine in the College of Physicians and Surgeons of this city, took place on Tuesday, the 4th of May, 1813. The exercises of the day were held at the College buildings in Pearl-Street, where, in the absence of the President and Vice-President, the honours of the institution were publicly conferred by Dr. HOSACK. The degree of *Doctor of Medicine* was granted to the following gentlemen, who had undergone the requisite examinations prescribed by the college, and defended the inaugural dissertations annexed to their names.

ANDREW ANDERSON, A. B. of the city of New-York, "*On the Eupatorium Perfoliatum of Linnæus.*"

HENRY BOGERT, A. B. of Albany, N. Y. "*On Angina Pectoris.*"

JACOB DYCKMAN, A. B. of New-York, "*On the Pathology of the Human Fluids.*"

HENRY MARSHALL, of Delaware county, N. Y. "*On the Febrile and other Diseases of the county of Delaware, New-York.*"

ELIJAH MIDDLEBROOK, M. B. of Connecticut, "*On the Nature and Treatment of Tetanus.*"

Election in Columbia College.

Robert Adrain, Esq. Professor of Mathematics in Queen's College, New-Brunswick, was elected, on the 4th of May, to the professorship of Natural Philosophy and Mathematics in Columbia College.

Important improvement in the working of Iron.

In No. I. of the New Series of the Emporium of Arts and Sciences, edited by the learned Professor Cooper, it is announced from the Annales de Chemie, that *cast iron*, previously heated to a cherry red, may be cut like a piece of wood with a common saw. As the truth of this discovery is of considerable moment to iron founders, and to all those who employ iron castings, Professor M'Neven tried the experiment a few days ago, and completely succeeded.

At the iron foundery of Messrs. Ward and Talman, the ingenious foreman of that establishment, Mr. Keenan, was directed to heat a cast-iron bar, 7-8 of an inch square, to a cherry red, in which state it was cut through with a common hand saw in one minute and a half. The saw was not in the least injured by the process. The workmen who witnessed it, observed that it must succeed with still more facility, when a saw is used that is better adapted to the purpose; one having finer and closer teeth, and a perfectly straight edge.

During the operation very numerous and brilliant scintillations issued from the iron, as when it burns in oxygen gas.

Observations on the Weather of the City of New-York, for the months of April, May, and June, 1813.

APRIL.

The weather of April, this year, was such as is usual in this country; throughout the month there were repeated and heavy showers of rain. On the 13th and 14th, great quantities of rain fell; the thermometer at 52, at 3 P. M. On the 16th and 17th days, the thermometer stood at 40, at

7 A. M. The weather for the remaining days of April, was more moderate, clear, and pleasant: wind southerly; thermometer repeatedly at 60, at 3 P. M.

MAY.

May set in with very pleasant weather; wind southerly: during the month we had many days on which very considerable quantities of rain fell, and others which were either overcast or cloudy. From the 5th to the 9th, with little intermission, the rain poured in torrents, accompanied with strong wind from the N. E. After this time, it again became very pleasant, with wind westerly or southerly. On the 15th we had a light fall of rain. From the 16th to the 22d, generally clear; wind southerly: thermometer at 61, at 3 P. M. The same may be said for the remainder of the month, excepting that at times the weather was unusually warm for the season.

JUNE.

The weather of the month of June was in a remarkable degree distinguished for its unusually great heat and moisture. On the 3d of the month, the mercury stood as high as 79, at 3 P. M. in the shade; wind from the south. On the 14th, at 7 A. M. at 65; at 3 P. M. at 80; and at 7 P. M. at 69 degrees. On the 18th, the thermometer was at 85 at 3 P. M. wind easterly: on the 28th, at 91 at 3 P. M. We had rain on the 8th, 9th, 13th, 14th, 16th, 20th, 23d, 28th, 29th, which often fell in very great quantity, accompanied with heavy thunder and lightning, and the atmosphere on many other days, was either cloudy or overcast; wind generally from E. at times S. or S. W.*

* The great heat of June was extensively felt in many parts of the United States. According to the accounts from different places in Pennsylvania, the heat was rather greater than that noticed in this city. At Raleigh, in N. C. on the 18th and 19th of June, the mercury rose as high as 102 degrees in the shade; the wind at the same time from the north west

Quarterly Report of the Diseases which prevailed in the city of New-York, during the months of April, May, and June, 1813.

The city of New York has been unusually healthy during the last three months. *Fevers*, strictly so called, with the exception of intermittents, have been comparatively few in number.

The *malignant pleurisy, peripneumonia typhodes*, described in the concluding number of the last volume, we are happy to state, has at length totally disappeared. A few cases, however, occurred in the month of April. In these, as in those noticed in our account of the diseases of the winter and first spring month, it exhibited the same compound character that had distinguished its first appearance, and required the same alterative treatment and cautious use of the lancet that have already been recommended.

In the present number, we present to our readers a valuable paper on this interesting subject by Doctor Low, of Albany, who has had frequent opportunities of observing the disease he has so minutely described. This document, with many others contained in the Register, affords the most ample testimony of the mixed character of the disease, and the peculiar treatment it demands ; that, as we have before remarked, it is neither purely inflammatory nor exclusively attended with the symptoms of typhus, but compounded of both, as has frequently been observed of some other diseases, viz. cynanche maligna, scarlatina, yellow fever, dysentery, and puerperal fever,* the history of which is recommended to some of our pamphleteers and anonymous newspaper scrib-

* See Dr. Gordon's account of puerperal fever, as it appeared in Aberdeen.

blers, who have undertaken to describe the epidemic referred to, but who appear yet to be unacquainted with the first principles of their profession.

Among the various opinions entertained relative to the proximate cause of this disease, there is one which ascribes it to the *liver* as its seat and source! We offer for the consideration of the advocates of this extraordinary opinion, the following fact: A gentleman of this city who had long laboured under a disease of the liver, and had recently suffered severe attacks of inflammation of that organ, was taken ill with the disease in question, in the month of April last; yet, strange to tell, throughout the whole course of his complaint, his liver remained totally unaffected, although his lungs and vascular system exhibited the usual symptoms of the epidemic, and in a very violent degree.

We admit the success of the practice recommended by Dr. Yates; but, in our opinion, the good effects of the remedies he prescribes, viz. emetics, cathartics, are much more satisfactorily to be accounted for by their general operation upon the excretions of the system, than by their exclusive action upon the liver and gall bladder.

"My whole attention, says Dr. Yates, is confined to a removal of the morbid bilious secretions which are unquestionably collected and continue pouring into the gall bladder;" but of this unsatisfactory doctrine, we have, on a former occasion, expressed our opinion, and which derives confirmation from the observations of Dr. Eights, contained in his paper published in the present number.*

The *measles*, which we noticed in our last number as prevailing in this city, has also, in a great degree, disappeared. But an eruptive disease in many respects resembling the measles, has prevailed to a considerable extent during the

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* See page 37.

last three months. Such was the resemblance it bore to the measles in its invasion, the character and extent of the eruption, that by many it was called the French measles. It, however, differed from the measles (rubeola vulgaris) in several particulars. The fever preceding the eruption, was very inconsiderable in degree, and of short duration, not more than twenty-four hours; and in some few cases the eruption appeared without any preceding fever; the eruption itself generally disappeared at the end of the second or beginning of the third day; the eyes were rarely affected with it as in measles, and in no cases as in the latter disease, was it attended with cough or oppression, excepting such as are attendant upon most febrile complaints. In several cases this disease occurred in children, who, some time afterwards, were attacked with the measles, attended with all its characteristic symptoms, and in other instances, adults who were certainly known to have had the measles in early life, were the subjects of this eruptive complaint.

Is it not the same species of disease that has been noticed by Dr. Willan, under the appellation of *rubeola sine catarrho*, "which," says that author, "does not appear to emancipate the constitution from the power of the contagion, nor to prevent the accession of the rubeola vulgaris at a future period, for (he adds) two instances of this recurrence being among my own children, and at an interval of two years, I can decidedly answer."* It is probably the same species of rubeola that has been observed by Rosen, Morton, Tozzetti, Robordiere, and Professor Spielman,† and which has given rise to the opinion, that the real measles, rubeola vulgaris, may be taken a second time; an error into which Dr. Willan himself appears to have fallen.

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* See Willan's Cutaneous Diseases, p. 235. Also his Diseases of London, p. 207.

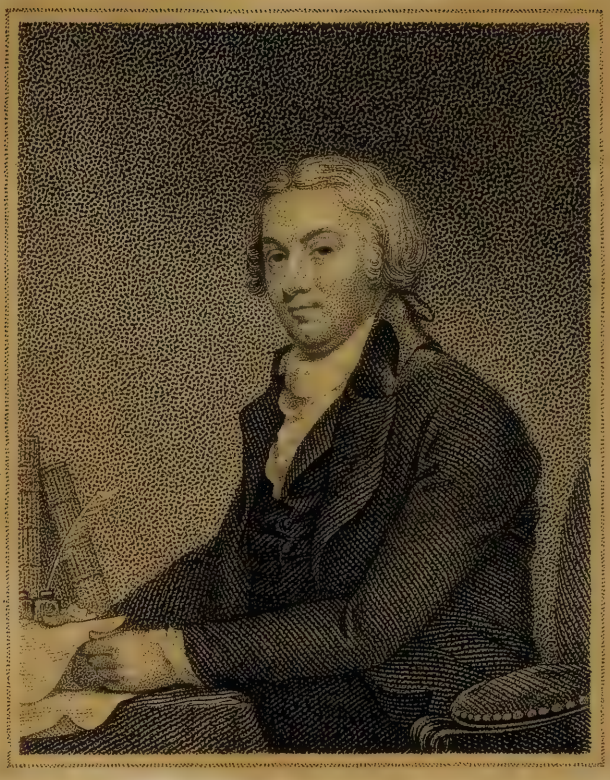
† See Burserius, vol. ii. p. 447.

Inflammatory diseases appeared as usual. Among these *ophthalmia* has been more than ordinarily prevalent; bloodletting, cathartics, blisters behind the ears, bathing the eyes with warm milk and water frequently throughout the day, and a soft light poultice of bread and milk (contained between a fold of cambric or old linen) applied going to bed, were the remedies we found most useful during the first stage of this disease; but as soon as the pain, heat, and other symptoms of inflammation began to subside, great advantage was obtained from a cold collyrium composed of a solution of the sulphate of zinc and rain water, two grains of the former to an ounce of the latter: this was applied six or eight times a day. In some instances, in the second stage of the complaint, a weak mixture of brandy and water applied cold, was also found beneficial both in diminishing the sensibility of the eyes and in restoring the tone of its vessels. We are aware that this is not the usual treatment of this disease, and that cold saturnine applications are usually resorted to by most practitioners, in the first stages of ophthalmia as well as other local inflammations. We have long since had reason to disapprove of this practice; for in most cases we have remarked, that in membranous inflammation of the eyes, the pain in the ball during the first stage of the disease has been increased, and the secretion from its surface sensibly diminished by cold applications. In like manner, in *ophthalmia tarsi*, the inflammation is manifestly aggravated by the use of cold astringent washes. But these observations are not only applicable to the use of lead water and other cold applications in inflammations of the eyes: we observe the same abuse to exist in the treatment of gonorrhœa, inflammation of the testis, and in recent injuries of the joints, as strains of the ankle, knee, &c.

In *gonorrhœa* lead water is the usual prescription, especially of young practitioners. The writer of this article,

many years since became acquainted with the pernicious consequences of that injection. Indeed, in every case of gleet following gonorrhœa, for which he has been consulted within twenty years past, he has, without a single exception, traced it to the debilitating sedative effects of that metal. Most cases too of the inflamed testis, which he has seen attendant upon gonorrhœa, have been produced by the same cause, viz. the too early and sudden check of the secretions of the urethra by the use of lead injections. In gonorrhœa as in inflammation of the eyes, his treatment of the first stage consists chiefly in abstinence from stimulant drinks and animal food, the free use of barley water, lemonade, and other diluents, mild cathartics, and other evacuants where they are indicated, bathing the part affected with warm water, or the use of the warm bath; and after the pain, ardor urinæ, and other symptoms of inflammation have somewhat subsided, the use of an injection of a solution of the sulphate of zinc from two to four grains to an ounce of rain water, employed six or eight times a day until the purulent discharge has totally disappeared. In like manner in the treatment of an *inflamed testis*, instead of cold saturnine applications, he has for many years past, in addition to the usual antiphlogistic means, employed tepid fomentations of vinegar and water, with the most beneficial consequences.

In the *inflammation of the capsular ligaments*, the effect of strains, the same practice is recommended until the pain, tumour, and inflammation are removed. When debility alone remains, and the parts are free from irritation, cold applications of vinegar, water, or spirituous liniments, may then be advantageously prescribed; but with many physicians a different practice prevails. Instead of warm, cold applications are directed from the very commencement of the injury, and which rarely fail to stiffen the joint, to increase the pain, and ultimately to add to, instead of diminishing the inflammation.



ROBERT R. LIVINGSTON L.L.D.

THE

AMERICAN MEDICAL AND PHILOSOPHICAL REGISTER.

OCTOBER, 1813.

ORIGINAL COMMUNICATIONS.

I.

Account of the LIFE *and* CHARACTER *of the Hon.* ROBERT R. LIVINGSTON, LL. D. F. A. P. S. *late Chancellor of the State of New-York, President of the American Academy of Arts, of the Society for the promotion of the Useful Arts, Member of the New-York Historical Society, &c. &c.**

(With an Engraving, by Leney.)

THE family of Livingston is an ancient and respectable one in Scotland, the head of which was ennobled by the title of Earl Newburgh, in the year 1661. That branch of the family which came to America about the middle of the 17th century, consisted of an uncle and nephew, whose numerous descendants are now settled in different parts of the United States, but principally in the state of New-York.

ROBERT R. LIVINGSTON was born in New-York, in the year 1746. His father, after whom he was named, was for

* A sketch of the life of Chancellor Livingston appeared in the "Public Characters for 1802," published by Phillips, of London. It is, however, very imperfect, and in several respects materially erroneous.

many years a judge of the supreme court, and died in the year 1775, a few days before the death of his gallant son-in-law, General Montgomery. His mother was the daughter of Colonel Henry Beekman, a gentleman of great respectability, and possessed of a large estate. She was remarkable for her good sense, fervent piety, and every virtue that could adorn the female character: she survived her husband several years, and died in the year 1800. Robert R. Livingston was a graduate of Columbia College, New-York, and after leaving this seminary he embraced the profession of the law. At an early age he was appointed Recorder of the city, and held that office until the year 1775, when warmly espousing the cause of his country, in opposition to British oppression and injustice, he was, at the same time with his father, ejected from office by the provincial governor. In the ever memorable congress which shook off the yoke of Britain Robert R. Livingston was an active and influential member, and was appointed one of the committee to draft the declaration of independence. He was next called on to attend, in the year 1777, the convention which met at Kingston, and was placed in the responsible situation of chairman of the committee to draw up a constitution for this state. For that part of it which creates a council of revision we are more particularly indebted to him; especially as the good effects of this provision, in guarding the constitution from precipitate measures and the violence of party zeal, has been seen on several occasions. In the same year he was appointed one of the council of safety, in whom were vested such powers for the preservation of the state as the distracted situation of the country imperiously demanded; and let it to his honour be recorded, that although surrounded frequently by those who were hostile to the liberties of his country, and at a time when civil war inflamed the

passions and resentments of parties, still was this extraordinary power never abused. The convention which formed the constitution, appointed Mr. Livingston the first chancellor of this state, an office of great dignity and responsibility, the duties of which he continued to discharge, with the greatest credit to himself, and advantage to his fellow citizens, until he was called upon, in 1801, to undertake the important station of minister plenipotentiary of the United States to the French government.

In the year 1780 he was appointed by congress secretary of state for foreign affairs, in which situation he remained until the peace of 1783; at the same time continuing to execute the duties of chancellor of the state of New-York. In the convention of this state in the year 1788, assembled for the purpose of taking into consideration the proposed constitution of the union, Chancellor Livingston was the representative of the city and county of New-York. On this important occasion his abilities were united with a Jay and a Hamilton, and it was principally owing to their combined talents and eloquence that this state adopted the constitution. At the inauguration of President Washington, the oath of office was administered by Chancellor Livingston, for whom Washington had ever a great esteem. In the year 1801 he went to France, and negotiated a treaty with the French government, in conjunction with Mr. Munroe. By this treaty the territory of Louisiana was transferred to the United States, securing to our western brethren the means of transporting their produce to the Atlantic; an object of so great importance as would have justified, as many had recommended, a resort to arms. This was, however, by Mr. Livingston's exertions, avoided; and as it was also stipulated that the sums due by the French government to our citizens should be deducted from the amount to be paid

for Louisiana, a large capital was thus restored to those who had long been soliciting payment in vain. During Mr. Livingston's residence in France he had an opportunity of seeing several of the most distinguished characters of Europe; particularly as the peace of Amiens induced many of them to visit Paris. Whilst he was ever anxious to promote the interests of his countrymen, and his house was always open for their reception, Mr. Livingston took every pains to support the dignity of his country in the eyes of the representatives of the different powers of Europe; and the respect in which he was held by the *corps diplomatique*, showed that his exertions were not in vain. Having travelled through a considerable part of France, and after visiting England, Holland and Italy, he returned to the United States in 1805, and continued to reside at his seat at Clermont, until the time of his death, which took place on the 25th February, 1813.

Chancellor Livingston possessed an active and vigorous mind, and an uncommon quickness of perception. He had early laid a solid foundation in literature; and the classics, which in youth he had studied with care, afforded him a source of pleasing recreation in his maturer years: gifted with such talents, and which were improved with so much care, it is not surprising that he excelled in the profession of the law; and his eloquence at the bar and in the senate was such as to rank him among the most celebrated American orators. In congress, and in the conventions of 1777 and 1788, opportunities were afforded for a display of his talents, and in all these public bodies he was greatly distinguished for his commanding eloquence, as well as ardent attachment to the cause of liberty. After the adoption of the federal constitution, and when the duties of the high court over which he presided had greatly increased, still did his unwearied appli-

cation allow him to devote a small portion of his time to experiments in agriculture and in the mechanic arts. Ever anxious to promote the welfare and maintain the independence of his country, his mind seemed always intent on the best means of effecting these objects. The agricultural knowledge which he had acquired by a series of experiments, and by an attentive perusal of the best European works on this highly interesting subject was not only laid before the *Society for the promotion of the Useful Arts*, of which he was many years president, but was cheerfully communicated to numerous correspondents as well as to those who visited him at his hospitable mansion. His mission to France, and visits to England, Holland, and Italy, enabled him to add much to his stock of agricultural information, and every circumstance, worthy of notice or practice, proper to be adopted here, was detailed in his letters to his friends at home.*

Convinced of the great importance of improving the breed of sheep, he had, previous to his leaving home, imported from Europe different species of that useful animal, without finding any which proved to be better than those already in the country: having, however, an opportunity of seeing a number of celebrated merino flocks, shortly after his arrival in France, he determined to enrich his country with those valuable animals, and early in the year 1802, sent a few of them to New-York. Some time after his return from Eu-

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* Beside the many important communications published in the Transactions of the Agricultural Society of the state of New-York, and in the Transactions of the Society for the promotion of the Useful Arts, under which name the former institution was re-organized, Chancellor Livingston enriched the article "Agriculture," for the American edition of Dr. Brewster's Encyclopœdia with much interesting matter. His addition to this article was the last of his literary labours.

rope he wrote a treatise on the Merinos, stating his own experience, as well as the best information he could obtain respecting them. This valuable *Essay* was presented to the society for the promotion of useful arts, and was, by direction of the legislature of New-York, printed, and extensively circulated.*

The mechanic arts had long engaged his attention, and opened a wide field for the exercise of his enterprising mind. His professional duties, however, so much occupied his time, that these, as well as agricultural experiments, could only be indulged as recreations; and whenever any thing occurred to him as an improvement it was readily suggested to those who had more leisure to pursue the inquiry. Our ingenious countrymen frequently applied to him for advice, and for his opinion on the utility of many of their inventions, and so well known was he for frankness and sincerity, as well as for knowledge in various branches of mechanics, that models were often exhibited to him previous to the application of the inventors for a patent. On these occasions his candour was always shown, as well in pointing out defects as in giving praise for what might be useful.

The practicability of propelling boats by steam, had long been with him a favourite idea. To encourage him to make an expensive and hazardous experiment, the legislature of this state granted him exclusive privileges for a limited period, and although embarrassed by the difficulty of obtaining suitable workmen, he still persevered, and built a boat on the Passaick river, which came to New-York. As her speed was not equal to what the law required, and unable

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* The Essay of Chancellor Livingston on Merino Sheep was, soon after its publication in this country, reprinted in London, and is now well known throughout Europe.

from his other avocations to devote as much time as he thought would be necessary to this business, he was obliged to postpone further experiments until he should have more leisure to conduct them under his own inspection. Shortly after this period he went to France, where meeting with Mr. Fulton, a gentleman whose talents do honour to his country, and whose mind, on many subjects, was so congenial with his own, they soon became intimate, and determined, after mature reflection on the subject, to make another experiment on the Seine. For this purpose they built a boat and procured an engine, and the result convincing them still more of the probability of final success, they resolved to prosecute the attempt when they should again meet in America.

An engine having been ordered out, and Mr. Fulton having returned, enabled them to renew their experiments in the year 1807, when complete success rewarded their talents and enterprise. Had not these gentlemen persevered, an invention so honourable to our country might never have taken place, or have been reserved for distant ages; such however is the ascendancy of genius, particularly when improved by culture, that those things which to common minds appear impossible, serve only to call forth the talents of those on whom heaven has bestowed her choicest gifts.*

It is proper to mention in this place, that Chancellor Livingston is deservedly considered the founder, and great benefactor, of the American Academy of Arts, established in the city of New-York. The first idea of an institution

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* For a more minute and interesting account of this important subject, the reader is referred to an Historical Account of Steam Boats, drawn up by Chancellor Livingston, and published in the American Medical and Philosophical Register, vol. ii. p. 256.

of this kind was communicated by him to his brother, E. Livingston, Esq. then mayor of this city. To the public spirited exertions of Chancellor Livingston, while minister at the court of France, the society is chiefly indebted for the valuable collection of statues, busts, &c. now in their possession, a catalogue of which was published in 1803.* He was chosen president of the academy in 1805, and was annually re-elected to that station, until his death, when the Hon. Dewitt Clinton was appointed his successor.†

In private life, Chancellor Livingston displayed virtues of the most exalted nature. He was early and constantly distinguished for his filial love, and blessed with a most amiable disposition: in him were united the kind brother, the tender husband, and the most affectionate of parents. His residence on his patrimonial estate was well known as the seat of elegant hospitality, and whilst enjoying every comfort and convenience that an ample fortune could supply, he had a heart that was ever disposed to assuage the sorrows and relieve the wants of others. The long time which he had passed in public life, and his residence abroad, had added greatly to the number of his acquaintances, many of whom, as well as other visitors, continually resorted to his seat at Clermont; and whilst they were highly gratified by his instructive conversation, were not less pleased with that politeness of manners for which Chancellor Livingston was so greatly distinguished. Temperance and exercise added to a constitu-

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* See an account of the American Academy of Arts, in the Register, vol. iii. p. 526.

† We are gratified to learn, that the Board of Directors of the Academy are making arrangements for an annual exhibition of the collection belonging to the society, a collection, as far as we can ascertain, superior to any other of a similar kind in the United States. It is ardently hoped and believed that the powerful influence and talents of the present president of the Academy will do much to ward advancing its interests.

tion naturally strong, enabled him to enjoy an uncommon share of good health, and until his last sickness, few men who had passed the grand climacteric retained a greater share of bodily as well as mental vigour. During the summer of 1812 he, however, had repeated attacks of sickness; and found temporary relief from the waters of Lebanon springs. In the autumn his disease was renewed with increased severity, and it was in vain he again resorted to the bath and to the pure mountain air, which he so much delighted in, and which he had formerly found beneficial. His glass, as he said himself, was nearly run, and the sad event too soon verified his prediction. In the month of November he became so much worse as not to be able to leave his house, and his family and friends saw, with the deepest regret, his rapid decline. From the time he became seriously ill until his decease, although frequently suffering under a distressing complaint, still no murmurs, no repinings at his situation, ever escaped him. On the contrary, every word and every action evinced the most perfect resignation to the divine will. To his family and relatives, he offered every argument that could tend to alleviate their distress; often would he express his grateful acknowledgments for the many blessings which Providence had bounteously bestowed on him; and when comparing his situation with those who were suffering, unfriended and unknown, while he was surrounded by affectionate relatives and kind friends, and able physicians, all anxious to render him service, his fervent thanks would be addressed to heaven, in a strain of piety that could only proceed from a heart of the nicest sensibility. Nor did his family and friends alone share his kindness; to every domestic who approached him, and some had grown gray in his service, he directed the most friendly and soothing language. Sensible that the period of his dissolu-

tion was fast approaching, he addressed his family in a manner becoming a man who was so soon to be separated from the dearest objects of his affection, and pointed out to them as the only refuge from all calamities, that Saviour on whose merits he alone relied for pardon and acceptance.

On a review of the life of Robert R. Livingston, whether we consider him in the character of a patriot, statesman, and orator, or view him in the elevated station of chancellor of the state; if we trace his steps in the paths of philosophy and science, or follow him to the shades of his beloved retreat, we find abundant reason for expressing our admiration of his talents and respect for his virtues; and a grateful country will not fail to rank him among those whose memory America delights to honour as her favourite sons, with Washington, Franklin, and a long list of others, who contributed to procure the independence, and by their talents to do credit to their native land.

II.

Sketch *of the* Medical Topography *of the country that is watered by the upper streams of the* Mohawk River, *and the adjacent streams of the* Oneida Lake, *&c. in the state of New-York; in a letter from Mr.* Matthew Brown, *jun. to* David Hosack, M. D. *of New-York.*

Sir,

Your letter of September last was duly received. I sincerely lament the occasion which again called forth inquiries into the "nature and origin of the Yellow Fever," and the dangers you must have encountered in the inquiry. The advantages of those inquiries, if you can arrive at the truth,

are honourable to yourself, and incalculable to your city and to the world at large. My apology for not answering your letter immediately is, that, at the time of receiving it, I was much engaged in professional business, and some avocations in my affairs made it necessary for me to be absent, for a considerable time, last fall, and the present winter.

I should gladly throw in my mite to facilitate your research after the truth: such information as I am in possession of, and the experience I have had in the disorders of this country, shall be detailed to you with cheerfulness. Yet, if I was to hazard an opinion, a description of the symptoms and termination of the disorders of our country, will go but little towards the establishment of the "doctrine of the domestic origin of yellow fever."

I will in substance answer your queries, by giving you a sketch of the face and appearance of this country; an account of the disorders which generally appear in the season, with the method I have practised in the cure. It may not be improper to observe, that the unguarded, or designing, declarations of many physicians, either to fill the gaping multitude with wonder, or to swell their own fame, have given currency to strange reports, which have gained belief in proportion to the distance they have travelled; and those reports are very apt to be credited, if they contribute in the least to the establishment of a favourite doctrine. But the facts are what you want.

I have resided at this village (Rome) between ten and eleven years. It is situated at the head of batteaux navigation in the Mohawk River and Wood Creek, about 116 miles to the west of Albany, 100 from Schenectady, and about 40 above the Little Falls.

At the last mentioned place, there have been undoubtedly great changes in nature. The mountain, which extends

down to the river, on each side shows evident marks of the water having fallen over the strait in a different place from the present falls. The rock is excavated, in many places, nearly a mile below the present falls, from twenty to forty feet above the highest water. These excavations are of a nature not to be mistaken, as they are worn smooth, even, and circular, and capacious enough to contain many hogsheads. If I was to hazard a conjecture, I should say, that I believed the country west of the Little Falls, from five to fifteen or twenty miles on each side of the Mohawk River, has once been a lake. I am confirmed in this opinion by the appearance of the hills, the quarries of limestone, composed of shells, &c.; and even the loose stones in the fields have the appearance of having been washed with water, and many of them are made of shells and other substances, which are petrified, and remain entire. The face of the country, for a considerable distance, is level, and the flat lands, particularly on the Mohawk River and Wood Creek, are made by the washing of the adjacent ground. We find trees, leaves, and other vegetable substances, from five to ten feet below the surface, and at a considerable distance from the channel of the streams. I know of many instances where those logs have been found several feet lower than the bed of the Mohawk, or Wood Creek.

We have but few ponds or swamps of stagnant water, if we except those made by the canal-company, on Wood Creek, the last and the summer before. The soil, for a considerable depth, is a rich compost, made from the annual decay of the timber, leaves of trees, and other vegetables.

About fourteen miles to the west is the Oneida Lake: the country around it is flat and swampy. Twenty miles north-west from the west end of the Oneida Lake is Lake Ontario. There are many swamps and marshes on this

lake, especially near the mouths of the creeks and rivers. It has been the opinion, that the country about the Oneida Lake is the most sickly of any part of the western country, except at the salt-springs in the county of Onondaga.

Our summers are unsteady as to the degree of heat. In the months of July and August, we have a few days of very hot weather, seldom over five or six, before a change, often to very cool, for a few days. Our changes are sudden and frequent. We have considerable rain, and long periods of cloudy, misty weather, after July, which has generally been the clearest month in the year.

The disorders of the country are such as physicians would say are natural to it, viz. intermittents, dysenteries, diarrhœas, and, some years, typhus fever, which often goes through a family and neighbourhood, when it once gets into it. These last vary in malignancy. The last year, [1803,] we have not had a single case of typhus. The year before they were very frequent. Intermittents have been very common, especially on the banks of the Mohawk River, and about the lakes. The symptoms of bilious remittent, or typhus fevers, do not vary from the descriptions given of them by many writers on this subject, which are too well known to you to need repetition. I have observed, that persons seized with typhus grow worse at periods, from seven to ten days, until about thirty days, and recover in the same order or periods.

As to the treatment of this fever, or dysentery, I cannot say I have ever been satisfied, either with my own, or other gentlemen's practice. Perhaps there is as great variety in the means prescribed for the cure of those two disorders in the country, as for yellow fever in town. From what I have seen, I am far from believing that bleeding, cathartics, and the antiphlogistic method of cure are without objections;

neither am I of opinion, that bark, wine, and opium, are infallible. I have generally cleared the first passages with neutral salts, jalap, and calomel, if the symptoms indicated an inflammatory diathesis, or if there was nausea or a load at the stomach. I am inclined to think, small doses of calomel, so as to affect the gums slightly, after a few days from the commencement of the disorder, and some wine and bark on the decline of the fever, have proved most successful. Very few have died of this fever, in this village, or its vicinity, for some years past. The gums and the glands of the neck, and other parts of the body, are often much affected, and even the jaw-bone quite carious; in several cases, one of which was a child, the patients died after many weeks; another recovered, after losing a considerable part of the jaw-bone, with three of the double teeth in it. Neither of these patients had taken calomel, but considerable quantities of bark and wine.

We have a fever in this country, which has got the name of *Lake Fever*. This is the fever which is said to be not unlike the yellow fever. It never attacks us till late in the summer, and the first months of autumn. A frost sufficient to stiffen the mud, or freeze water so that it can be perceived, puts an end to any new cases. It begins with slight chills, pains of the back, loins, and head. The symptoms do not vary from those of the ague and fever, except in the duration of the paroxysms, which have regularly an exacerbation once in twenty-four hours, and commonly in the latter part of the day. These fevers have no regular duration or change, but frequently end in regular fits of the ague and fever, and sometimes go off as the typhus. It often happens, that those who have been afflicted with this fever remain debilitated, and subject to slight returns, for two or three years, with œdematous swelling of the feet, hands, and face, a pale yellowness of the skin, flatulency of the

stomach, and, in a few instances, a vomiting of a yellow bile, once in every few weeks. I have never seen any thing which resembled the *black vomit*, as described in the yellow fever.

Very few die of this fever, if they have assistance in season. The bark with wine is a sovereign remedy, if the system is not too far exhausted, to receive the stimulus of those remedies. There is a strong languor, or leucophlegmatic appearance, in those people who have been severely attacked by this complaint; a kind of stupid insensibility, and want of animal warmth, under which they often labour for many months. Their gums sometimes become spongy; teeth loose and carious, with hæmorrhages from the gums, nose, and throat, long after the fever has subsided, and the appetite very voracious. To one that has been in the habit of observing those fevers, it is not difficult to discern the character of the intermittent through the whole of this fever; and I am fully convinced, it is no other than a high degree of this disorder, increased, perhaps, by the quantity of contagion, or the dirty and miserable situation of those people, as to houses, linen, and other things, which are so necessary to health.

At the Salt Springs, in the county of Onondaga, there have been great numbers of cases every autumn. I have seen hundreds who have taken this fever, but I cannot conceive it to be different from the other cases I have mentioned.

I am, Sir, &c.

MATTHEW BROWN, Jun.

Rome, April 1, 1804.

III.

A Case in Surgery, *with reflections. By* Henry U. Onderdonk, M. D. *&c. communicated in a letter to* David Hosack, M. D. *&c.*

New-York, August 13th, 1813.

Dear Sir,

As the following case has suggested some reflections which will probably be interesting to the surgical part of our profession, I take the liberty of sending it to you for publication.

June 17th, 1813, George Hanley, an apprentice with Messrs. Browns, ship builders, at Manhattan Island, cut his knee with a broad-ax. As the wound bled but little at first, the medical gentleman in attendance dressed it as an ordinary one. About the middle of the day the hemorrhage became troublesome, the blood being of the arterial hue, and flowing *per saltum*. In the afternoon Dr. Rockwell was called to the patient, and applied the twisted tourniquet, which restrained the hemorrhage. About five o'clock, I saw him, in consultation with Dr. Rockwell, and we agreed to tie the superficial femoral artery, as in the operation for popliteal aneurism.

Our reasons for this practice were concisely the following: 1. As the wound was longitudinal, and on the anterior inner part of the knee, between the patella and the other bones, it was evident that the artery or arteries* divided must

* There are three branches in this situation, any or all of which may have been divided; they are denominated by Murray, the "large anastomotic," the "superior interno-articular," and the "inferior interno-articular." See Murray on the Arteries, Scott's translation, p. 143, 147, 149.

be small naturally, and still smaller from their contraction, in consequence of the loss of blood, and that it would therefore be very difficult to discover them; 2. This difficulty would be increased from the cellular substance being much injected with blood; 3. All these small arteries lie deep, among ligamentous parts, and, in order to secure them, considerable dissection would probably be necessary, which would add to the danger, already very great, of the loss of the limb, or at least of a stiff joint; 4. Tying the femoral artery would lessen both the quantity and the impetus of the blood derived to the joint, and thus, probably, render inflammation less severe, and its bad consequences less likely to supervene.

The superficial femoral artery was accordingly taken up at the point where it passes under the sartorius muscle, Dr. Rockwell assisting me in the operation. The artery was laid bare for a space of about half an inch, and the ligatures tied at that distance apart, the upper one being secured according to Mr. H. Cline's method, and the artery divided as recommended by Mr. Abernethy. No muscular branch requiring a ligature was divided. The wound was dressed as usual.

The wound of the knee was then cleansed. The end of the finger could be inserted between the patella and the two other bones; and a probe passed under the ligament of the patella to the other side of the joint. This wound was also dressed with adhesive plaster and an uniting bandage.

The patient, from the time of the operation, complained of no pain in the limb; the wound in the knee was entirely healed by the 12th day; the lower ligature came away on the 16th day, before which time, the patient (without permission) had twice walked about on the island: on the 5th of July, also, he walked half a mile and back, to see a bal-

loon; the upper ligature came away on the 21st day; and in about a month he returned to his work, being cautioned against undertaking such as required any great exertion or fatigue.

To estimate the effect of the operation in preserving the knee joint in the above case, it may be proper to notice the opinion of one or two surgeons of high reputation, on the danger of such an accident. "Wounds of the joints," says Mr. John Bell, "are so dangerous by their high inflammation that they may fairly enough be compared with wounds of the great cavities; inflammation, and pain, and violent fever, ensue; often the patient dies delirious on the first days; or if he survive these first dangers, it is to die by a great flow of matter, hectic fever, erosion of the cartilages, and spoiling of the bone." "Though there are in every book, cases of anchylosed joints, we cannot but remember that for one that has escaped by anchylosis, thousands have died."* Mr. S. Cooper† relates a case in which a lad who wounded his knee with a penknife, died in consequence of the violence of the inflammation and fever; and he subjoins in his "remarks," "I believe the severity of the constitutional symptoms is always greater when the inflammation of a joint arises from a wound, than when it is the consequence of a contusion or sprain."

I am aware that some wounds of joints have been far different in their event;‡ but I believe there is no criterion by

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* Bell on Wounds, part iii. p. 12. † On the Joints, p. 28.

‡ Mr. Hey, who seems to think lightly of wounds of the joints, says, of a case rather more severe than mine, "the patient recovered so well that in the space of four weeks he became able to *move* about in the ward upon crutches." (Hey's Surgery, 2d ed. p. 360.) This is his most successful case; my patient *walked* without crutches in two weeks or less, and in four weeks returned to his work.

which we can distinguish at first sight what wounds will terminate thus favourably; and until we are made acquainted with such criterion, we are warranted in reckoning as dangerous, all wounds in the joints not made with great caution, and not accompanied with sedulous endeavours to prevent inflammation.

It is therefore every way probable that the above operation was the means of preserving the joint at least. And this case is sufficient to prove, independently of theoretical calculations, that tying the main artery will prevent violent inflammation. The wound in the joint was of considerable extent, and air and blood had been freely admitted. It is not improbable that the bones or cartilages were struck. The hemorrhage doubtless lessened the immediate inflammation, but can scarcely be considered as preventive of the terrible consequences enumerated by Mr. Bell; particularly as we know that all our endeavours to obviate inflammation, are frequently of no avail. It may be added that the wound was in the knee joint, the joint most likely to inflame on account of its great surface and complicated ligamentous structure, and which probably is the seat of disease, as often as all the other joints together. I trust it will not be deemed rash to recommend a similar operation in some cases in which inflammation and its consequences are to be dreaded, and for which we can scarcely be said to be in possession of any remedy.

1. In severe wounds of joints, (the knee joint at least,) we have the above case as a precedent.

2. In bad compound fractures such an operation may be serviceable. In these cases, when very violent, amputation is usually resorted to; but tying the main artery of the limb will certainly lessen the inflammation, and if amputation should become necessary afterwards, no impediment will

have been occasioned by the previous operation. In these accidents indeed, (unless the soft parts be too greatly mangled,) I should be sanguine in expecting from it the preservation of the limb. For, if ordinary compound fractures can be cured by ordinary means, the powerful means proposed, by obviating high inflammation, would most probably reduce a very violent accident of this kind to the condition of the least violent.*

3. I ought to add, that I once heard a student in the London hospital propose tying the femoral artery as an experiment towards the cure of white swelling of the knee joint. As it is considered by surgeons of the present day, that these affections are less frequently caused by scrophula than by common inflammation, the proposition seems highly reasonable.

Tying the femoral, popliteal, or brachial arteries, are very simple operations, and may be easily performed by any one who is expert in anatomy and dissections. In elderly subjects it should be attempted with caution, lest the anastomosing branches should not enlarge sufficiently. But in the middle aged, more especially in young persons, there is not half the risk in the operation that there is in either of the above accidents or diseases.

The operation of tying the femoral artery for the cure of popliteal aneurism, was at first regarded as an experiment;

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* In vol. ii. of the Medical Facts and Observations, is the case of Thomas Oliver, aged 60, who suffered a compound fracture, "so that the lower part of the leg, with the foot, remained hanging only by a small portion of the gastrocnemius internus or soleus muscle." This limb was preserved, the bones united, and the wound healed completely in about two months. It is very clear that the anterior tibial and interosseal arteries (scarcely the posterior tibial) must have been lacerated in this case: and to this doubtless the prevention of violent inflammation and mortification is to be chiefly attributed.

but no conscientious surgeon could refuse it a trial, because the choice lay between that and amputation. Its merits were soon amply confirmed, and it would now be reckoned madness to amputate for aneurism. In the above proposal also, the choice may fairly enough be said to lie between amputation and tying a main artery. It would not have been made public with only one case in confirmation, if the opportunities of private practice had justified the expectation of being soon able to test it by more extensive experience.

I am Sir, with great consideration,

Yours, &c.

HENRY U. ONDERDONK.

DR. HOSACK.

IV.

ACCOUNT *of the* YELLOW FEVER *which prevailed in* VIRGINIA *in the years* 1737, 1741, *and* 1742, *in a Letter to the late* CADWALLADER COLDEN, *Esq. of New-York, from the late* JOHN MITCHELL, M. D. F. R. S. *of Virginia.**

SIR,

In giving you an account of the pestilential distemper which has lately raged in Virginia, I shall not touch on any

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* A series of highly interesting papers on the Yellow Fever which many years ago prevailed in Virginia, embracing the account written in 1744 by the late Dr. Mitchell of that state, with a reply of Dr. Colden to Dr. Mitchell, and a subsequent letter of Dr. Mitchell on the same subject, was placed in the hands of Dr. Hosack by the late Prof. Rush of Philadelphia, a short time previous to his death. As these papers were intended by Dr. Rush for publication in the Register, we have commenced in this number with the first in order, the letter of Dr. Mitchell to Dr. Colden. Some of our readers may recollect that extracts from this account formerly appeared in the Philadelphia Medical Museum; they however

thing relating to it, which you have had a full account of already in the same or like disease; that I might the better consult leisure for writing, and spare you the tedious trouble of reading. For which reason it would be needless here, to enter into a particular enumeration and description of all the symptoms which accompany this dire disease; they being no more, and no fewer, than what are commonly ascribed to, and may be observed in most malignant fevers; besides, they are already enumerated by Dr. Warren. The symptoms and three remarkable stages of our disease, are much the same as those observed by the said author in the malignant fever of Barbadoes; but I shall recount those symptoms, which appeared to me to be pathognomonic and inseparable from the disease, at least when rightly formed, as they seem not yet to be so well known; by which this fever will appear to be of the malignant kind, as it generally resembles those that are contagious, by its first appearing with a pain in the head and back and about the stomach, succeeded by grievous anxieties and oppression about the præcordia. And in general this distemper may be defined to be, a pestilential fever proceeding from a *contagious miasma sui generis*, which inflames the stomach and adjacent viscera, obstructs the biliary ducts, and dissolves the adipose humours; to which generally succeeds an effusion of a bilious or other yellow

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will now be furnished with an entire copy. Few papers we believe will be read with more interest, particularly when it is known how extremely important Dr. Rush considered it in affording him new views of the nature of the same epidemic at the time it prevailed in Philadelphia in 1793.

On the character of Dr. Mitchell it is unnecessary particularly to remark. He was a distinguished Fellow of the Royal Society of London, and eminent as a physician and philosopher. With Chalmers and Lining, of South Carolina, and Alexander and Colden, of New-York, he has done much for the advancement of medical and physical science on this side of the Atlantic. EDITORS.

humour upon the external or internal surface of the body, unless prevented by some means or other.

Those pathognomonic symptoms appeared to be the following six, of which the three last are more peculiar to it. 1. A very great and sudden debility, without any manifest cause. 2. A feverish anxiety, generally very grievous. 3. A short, quick and difficult orthopnœic respiration, after the fever is formed. 4. A contracted deep pulse; the artery feels tense, but the pulse is compressible, to which succeeds a depressed, or soft and low pulse, after the state of the disease, or after the yellow effusion appears. 5. A pain of the scrobiculus cordis, either much complained of, or to be felt on pressing that part; and more or less severe according to the severity of the disease. 6. A yellowness in the eyes or all over the body at the state of the disease; unless prevented by colliquative or critical discharges; to which may be added a violent and unusual kind of pain of the head, unless it is drowned, as it were, in the more grievous complaint about the præcordia.

The proximate causes and state of the body in this disease may be pretty evident, to those versed in the animal economy, from the following anatomical dissections.

February 14, 1741-2. At the request of Richard Chichester, Esq. in Virginia, and in the presence of him and several others, I opened the body of one of his slaves who died of this disease. This was the body of an elderly woman, past forty, who died the day before, on the fourth of the disease, with the following complaints: grievous and violent anxieties, occasioned, as she said, by the sickness of her stomach, severe pain of her head and back, returning by intervals, contracted hypochondres, and the scrobiculus cordis painful to the touch, short, quick and interrupted respiration, with deep sighs and heavy groans; a slight raving rather

than delirium, a black tongue, unquenchable thirst, tremors, very quick and depressed pulse, the eyes very yellow, a sudden and severe pain about the navel a few minutes before death.

After cutting the teguments of the abdomen, the fat of the body appeared very yellow, so as to be noticed by the bystanders, and was indeed as yellow as the eyes commonly are in a jaundice. Upon penetrating into the cavity of the abdomen and laying the teguments aside, I was surprised to see no such thing as an omentum; at first I imagined I had torn it off, or removed it to one side with the teguments; but in vain was it sought for in the whole body. There appeared a few things like the blood vessels of the cawl adhering to the place where it is generally connected to the stomach and colon; the traces of which connection might be discerned; but there were no more remains of its substance, than a little yellowish thin oily liquor floating up and down among the intestines and about the mesentery.

The liver appeared turgid and plump without any blemish on its outer convex surface; but on the concave surface, two thirds of it was of a deep black colour, round the gall-bladder seeming to be mortified or corrupted.

The gall-bladder appeared outwardly of a deep yellow, but within was full of a black ropy coagulated atra-bilis, which sort of substance likewise obstructed the porus bilearius and ductus choledochus. This atra-bilis was hardly fluid; but on opening the gall-bladder it retained its form and shape without being evacuated, being of the consistence of a thin extract, and withal glutinous and ropy like soap when boiling: this black matter seemed so much unlike bile, that I doubted if there was any bile in the gall: it more resembled bruised or mortified blood, evacuated from the mortified parts of the liver surrounding, although it would

stain a knife or probe thrust into it of a yellow colour, which, with its ropy consistence, seemed more peculiar to a bilious humour.

The duodenum was of a deep yellow colour as usual upon its outside; but where contiguous to the cystis fellea, had a mixture of a deep green or eruginous colour intermixed with its yellow; within, it contained a viscid bile, or rather a yellow mucus, closely adhering to its tunics, mixt with a little of the black bile, like that contained in the cystis. Its villous coat appeared to be lined with a thicker fur or slime than ordinary, which being scraped or peeled off, the other vascular and muscular coats of the gut appeared red and inflamed.

The stomach seemed manifestly inflamed; it had on its outer surface, towards its upper orifice, two large broad spots of a dark red colour, somewhat resembling the flushings in the cheeks, or a rose on the leg; it had nothing within but a little drink which had been just swallowed, and some of the black choler, resembling that in the gall-bladder, floating upon it, which was of a blacker colour here than in the gall-bladder itself; it looked ruddy within as if it had been inflamed there likewise; its villous coat appeared, like that of the duodenum, more fuzzy and slimy, as if it were swelled or distended, which was particularly remarked by all others who opened any bodies that died of this disease.

The lungs, instead of being collapsed, were rather inflated as in inspiration; they were all over full of black or livid spots, some as broad as the palm of the hand, others much smaller; on which spots, generally, were to be seen small vesicula, or blisters, like those of an erysipelas or gangrene, containing a yellowish humour.

I did not so curiously examine the other parts, as I saw no defect in any: and these seemed sufficient to show the

cause of her death, and account for the several symptoms of her disease: only the blood vessels in general seemed very empty of blood, even the vena cava and its branches; but the vena portæ was full and distended as usual; the blood seemed to be collected in the viscera; for upon cutting the lungs, or sound liver, or spleen, they bled freely. The brain was not opened, for want of conveniences at hand; but it did not seem to be affected in the disease, and was not affected in three more who were opened.

This woman was taken with a pain in her head and back, extending from the loins as far as the region of the liver, with great sickness at her stomach, succeeded by chilliness, burning fever, anxieties, &c. and was treated with a snake-root sweat in the time of her disease; but took a vomit at its first seizing her, which brought up much dark, bitter choler, without any relief. She was in perfect health before this distemper seized her all of a sudden, as she was at work.

The day before, I opened likewise a girl about twelve or thirteen years old, who had been dead about two or three days, and was preserved on purpose for me to open. She died on the sixth or seventh day of the same disease, with which the other and several in that family had died. In her, the distemper was left almost entirely to nature, except her losing about four or five ounces of blood, and the plentiful use of diluting teas which she had recourse to. A little before her death, she complained in the same manner with the other, of a most violent pain in her belly about the navel, succeeded by grievous and intolerable anxieties: they had no suspicion of a yellow fever at that time, and so did not notice her eyes.

There was little difference between the affection of the parts in her, and the one whose case has been related. The

fat of the body did not appear quite so yellow; but the liver had a much greater and deeper mortification or blackness on it, the whole under concave surface of it was very black as far as to the very edges, which penetrated very deep into its substance about the gall-bladder, which was full of the same atra-bilious, glutinous, ropy humour as in the other. The omentum was entirely consumed or destroyed in this subject, in the same manner as in the other, whose case has been related; and a little yellow oily matter floated up and down in her abdomen. The stomach and duodenum were affected much as in the preceding case, only there was little sign of any external inflammation on the stomach. The lungs were affected in the same manner, but not with so large or deep black spots.

In the spring of the year 1737, there were two more opened, who died of the same distemper, in whom the parts were affected in the same manner as has been related in the first case, particularly as to the destruction of the omentum, blackness of the concave surface of the liver, contents of the gall-bladder, inflammation of the stomach and spots on the lungs; as he who made the dissection, and others who were present at it, particularly informed me. September, 1742, another was opened who had died of the same distemper, as the two persons above related; although got from a contagion which was supposed to have come from a different place: in him the omentum was likewise entirely consumed and destroyed; the stomach a little inflamed, but no blackness was discerned on the outer surface of the liver, and its inner substance was not looked into, although the cystis fellea and biliary ducts were full of the same black, glutinous, coagulated matter, as in those cases I have related.

The following account of the state of the blood which I have carefully observed in this disease, may likewise help

to illustrate its nature, and show the state of the body in it. The blood extracted by venesection is of a deep red or florid colour, appearing to be thin and fluxile, with no sizy inflammation, crust, or skin whatever upon it when cold: the crassamentum is broad, shallow and floating, being easily divided by the fingers; the serum makes about two thirds of the whole blood, or more, when let at, or nigh the state of the disease; and about one half at the beginning: after the state or height, it seems by the pulse to be more; a large proportion for an acute continual fever. Even those who are bled after a received contagion before the fever is formed, have a thin dissolved florid blood, even in winter. This was the constant state of the blood in about thirty or forty whom I have known to have been bled, at all seasons of the year. But the arterial blood which I have had an opportunity of seeing was very different. Feb. 17, 1741-2, five or six ounces of blood were taken from the temporal artery of one labouring under this disease, on the fourth day, just as the yellowness began to appear in the eyes, attended with a stupor; this blood was not more florid than what the veinous blood generally is in this distemper: when cold it had a purulent yellow skin or inflammatory crust on the top, exactly resembling the crust on the veinous blood of pleuritics, but not very thick, although tough and not easily divided; the crassamentum was very cohesive, thick and blackish at bottom; the serum made not above a sixth or eighth part of the whole, which was of a deep yellow or saffron colour, and would tinge the finger or a linen rag dipped into it, of the same colour as if dipped in gall; deeper than is commonly to be seen on a rag dipped in the urine of persons in a jaundice. On this every one that saw this blood was convinced that the distemper was what is generally called the yellow fever in America.

Dr. Langrish says, we are not yet well informed of the state of the blood in malignant fevers; this perhaps may be some help to a more certain and general determination of that necessary point.

Qu. Whether this difference between the blood of the veins and arteries is not a confirmation, or rather an ocular demonstration of the ingenious Bellinian hypothesis, which supposes a viscid lentor to be joined with a more dissolved acrid blood in malignant fevers? It is true, there was no blood taken from the veins of this person, but there was from one labouring under the same disease, in the same house, on the same day of the disease, but a few days before, which was like what I have described the blood of the veins to be; and was always found to be by all that ever saw it in this distemper. If this is the case in other malignant fevers, what surer sign, or more powerful cause can there be of their malignity than that the arterial blood should be viscid, thick, and sizy, whilst the blood in the veins is thin, dissolved, and fluxile; so contrary to all the laws of circulation. Whence colliquations and obstructions at one and the same time; irritations joined to viscidities! Spasms brought on inflammations. Hence a mortification of some, and total destruction of other internal organs in a few days time! I cannot pass over two other remarkable circumstances of this disease: I mean the total destruction of the omentum and yellowness of the body which seem so peculiar to it. As for the first, it appears from these dissections, and likewise from the whole course and symptoms of the disease, that there is an inflammation of the stomach, joined with spasmodic constrictions and convulsive motions of that and also other parts about the præcordia. These spasms hinder the flux of the bile throughout the ductus choledochus into the duodenum; (*vid.* Hoffman, de Inflam. ventris,) which by the heat of the

adjacent inflamed parts, is thickened to that degree which we have described to be in the cystis and ducts; hence an obstruction of the liver as well as of the biliary ducts. This obstruction of the liver causes a slower eflux of the blood and dissolved adepts from the omentum through the venæ portarum; whence the blood is accumulated, stagnates, ferments and corrupts in the omentum: at the same time the inflammation and spasms of the stomach cause an obstruction and slower circulation of the accelerated blood through the gastric arteries; hence the blood will be propelled in greater quantities and augmented force through the other branches of the cœliac artery, but especially through the gastro-epiploic, which arise or proceed immediately from the gastric. Hence the blood is more forcibly impelled into the omentum whilst it is denied a passage through it, or exit out of it, by the veins: from whence, not to mention other concurring causes, as spasm and heat of adjacent inflamed parts, distortions, from anxieties, &c. arises a large, sudden, and total inflammation, strangulation of the circulation in that whole organ, which necessarily brings on mortification, putrefaction, and dissolution; especially in so tender and delicate a part, used to the slowest circulation, and the mildest, smoothest humours of the body, and through which a thin, hot, sharp blood is now propelled with an augmented force and celerity. Surely the inflammation and suppuration or mortification by a boil is brought about and breaks through the skin, a much thicker membrane than the fine subtile membrane of the omentum, in as short a time, in the analogous membrana adiposa. But another no less powerful cause concurs to this destruction of the omentum, the inflammation of the stomach spreads over it, in another manner, and from another cause, which is no less destructive to it. It is well known that the inflammation accompanying malignant fevers is of the erysipelatous kind. All the circumstances of this disease,

and the very looks of the inflammation of the stomach seem to confirm the same. But the nature of an erysipelatous inflammation is to spread from one place to another; and from hence this inflammation, when it is once fixd on the stomach, easily spreads over the contiguous omentum: and any one may easily imagine, what havoc the sharp and ulcerating blood of an erysipelas, must make on a tender and delicate omentum; being moreover so contrary to its natural humours; but perhaps some may imagine this cause not to be different from the other before mentioned. I need only hint, what dire and fatal effects, such a spreading pernicious affection must produce among the other adjacent or contiguous organs to the stomach, the liver, spleen, pancreas, pylorus, intestines, mesentery, and especially the diaphragm, but above all the upper orifice of the stomach; from an inflammation of which those who escape, as Forestus expresses it, may be reckoned the sons of Jove; hence those syncopes, convulsions, hiccups, sudden, and unexpected deaths, and most other fatal symptoms of the disease. For if such an inflammation totally destroys a part in a few days, how dismal and fatal will its effects be, when it seizes the vital nerves and organs! But perhaps it may not be amiss to take notice of the symptoms which seem to be diagnostic signs of this destruction of the cawl, an accident which happens, or is taken notice of so seldom, that its signs seem to be unknown. These appeared to be more than ordinary anxieties, a fear and dread of any thing touching the region of the stomach, great and intolerable pain on pressing the scrobiculus cordis, no sign of respiration below the ribs, a palpitation of the abdominal muscles, contraction of hypocondrics and violent excrutiating pain about the navel, forerunning death. In the next place I shall consider the cause of the yellowness which is so remarkable in this dis-

temper, as to have given it the name of the Yellow Fever. Although this is rather an accidental symptom than an essential mark of it, as the vulgar believe, yet it is far less to be deemed a critical discharge or appearance or salutary effort of nature to get rid of her oppression; it is rather the most threatening symptom which appears in the whole disease, as will be evident to those who consider its causes. These causes may be referred to the following affections of the body, of which sometimes one and sometimes all these seem to conspire to produce this dreadful appearance. By what has been related above we may see that the blood is dissolved in this distemper, and it is probable that the serous parts may be dissolved or attenuated by the disease as well as the red globules: these dissolved humours will be apt to enter the lymphatics, &c. vessels, designed to convey a more subtle aqueous, and consequently more pellucid fluid, than they; for we know that the lymph is much more clear and pale than even the serum of the blood, in time of health, but more especially in many inflammatory fevers. But this does not seem to be sufficient to account for that universal deep and intense yellowness, which is often to be discerned in the skin, but especially in the eyes of some people labouring under this disease; nor is it sufficient to account for the yellowness of the urine, which I have seen of as deep a yellow in this disease as in those that labour under jaundice. We see that the omentum is much dissolved, so as to be sometimes totally consumed, and it is very probable from the great and sudden prostration of the body without any manifest copious evacuations, that the other adipose humours are likewise dissolved in this disease, as contained in the analogous membrana adiposa. This dissolved adeps will not easily incorporate with a thin dissolved blood in such a precipitate circulation; but be left to stag-

nate in the extreme capillaries, wherever the circulation is slowest; besides, by the heat of the body in the fever, it will be turned more yellow, and by incorporating with the acrid salts of the blood, now disengaged from its other component parts, whose texture is broken or operated upon by the miasma, or effects of the disease, a bilious humour will be generated, not unlike true bile itself; as bile is nothing but a humour resulting from such a mixture, its oily parts being more particularly supplied by the omentum.

This seems to be the more particular cause of that yellowness which is so peculiar to this disease, and may particularly distinguish this symptom of it from the same appearances in other distempers. But when the liver is inflamed, as we see it is in a few days, or the spasms or inflammation of the stomach and duodenum or inspissation of the bile in the cystis, puts a stop to the eflux of the bile through the common duct, then no one will doubt, but that a true and genuine icterus is produced from the true bile, in the manner commonly explained. And indeed this symptom, when the yellowness is great and very deep, appears to proceed chiefly from this cause, as it first appears in the eyes, then in the urine, and goes off by a tinctured lateritious urine, or bilious stools; in all which it resembles a true icterus from hepatic bile. It is often, likewise, attended with a singultus, a sign of an inflamed liver; at other times this yellowness comes on with a rigour, as Hippocrates likewise observed, (*de vict. an. lib.* 4. §. 7.) like a true abscess or translation of a heterogeneous matter from one part to another. Nor is it very probable that that deep yellowness of the blood, taken notice of above, is occasioned without some admixture of the hepatic or cystic bile with it. To this cause seems to be owing that icterus which if it does not appear before the seventh day, continues during the apyrexy, but proves dan-

gerous in the relapse, which is seldom attended with any yellowness with us.

It is of the greatest importance in the cure, to know the course and stages of this disease, and the different changes it undergoes from first to last; with the times when they may be expected. By an account of this we may satisfy an ingenious query of the learned Dr. Clifton in his Hippocrates, p. 260, to wit, 'Whether the observations concerning the course and periods of acute diseases, delivered by Hippocrates, hold true in places at a greater distance, such as the East and West Indies, America, &c.?' This is reckoned a disease as peculiar to our new world as any other, and consequently as fit to adjust this matter by; which, if once determined, may make those excellent observations as universal and extensive as they are useful. But I have not only observed this; but likewise other epidemic diseases, which owe their rise to a certain uniform cause, which seem to be the diseases chiefly pointed at by Hippocrates in his Prognostics, to have the same course and periods in Virginia as delivered by the father of physic.

This fever was exasperated on equal or unequal days, till the fourth, which was what is called the state of the disease in Virginia, in the winter and spring season, when the disorder has chiefly raged here: on this day the signs of the yellow effusion began to appear, either in the eyes, or by vomiting and purging; this day was the index of the seventh. All good changes or favourable symptoms now denoted recovery on the seventh, as any bad appearances on this day portended death on the sixth. If the exacerbations were on equal days, they generally died in the third paroxysm, or the sixth day; but if on unequal days, they recovered on the seventh. Relapses happen either on the eleventh or fourteenth, which were adjudged on the fourteenth or seven-

teenth respectively; and this without exception in any, except those in whom the natural course and tendency of the distemper was prevented by a preposterous method of cure, or sudden and extreme severity of the disease, and all the regular efforts of nature overset thereby.

This distemper is remarkably contagious, of which we had the better opportunity to be satisfied here in Virginia, where we live in separate and distant plantations, consisting of numbers of servants and slaves; any of whom, if the distemper once seized, there was little security for the rest, but removal. The distemper spread rather slower than I have observed the measles or small-pox to do here; but it spreads faster and rages more violently in the spring season, or from Christmas to Whitsuntide, than any other time of the year; which I have likewise observed of these other distempers in Virginia. But the vicissitudes of our seasons in Virginia, where the changes in the seasons are reckoned greater than in any other place whatever, or our care in preserving against it, seem to have put a stop to the contagion. But it is likely that in the West Indies where they have no such vicissitudes of seasons, which are generally observed to put a stop to a pestilential contagion in northern climes, they may hardly ever get rid of this distemper, (no more than the Turks in Asia and eastern nations do of the plague,) without a purification of the infected places, or separation of the sick. As this was the case, several prophylactics were sought for, when it got into large families; the common alexipharmic method with snake-root drams I knew to prove ineffectual.

The following seemed to be the only effectual prophylactic I ever knew tried, and which proved effectual in fifteen in one family, where none escaped without some preservative or another; and wherever it was duly complied

with, the good effects of it were very evident. I observed, that before the fever formed itself, the sure sign of a received infection, ready to display its tragical effects, was a sudden and unusual pain of the head, generally above one or both eyes, which in some remitted with short intervals, and caused a giddiness or vertigo, rather than sharp pain, attended with an unusual feebleness and languor of the body, and often a sickness at the stomach; these complaints, I observed, were little regarded till the fever seized them very often all of a sudden, a few hours afterwards. Upon the first complaint of this pain of the head, they had six or eight ounces of blood taken from the arm. Some fell into large sweats or plentiful breathings, soon after bleeding; by which their disorders went off: but those that did not sweat, and their complaints continued, took a vomit of ipecacuanha soon after bleeding, and the night after the vomit fell into the like sweats, by the plentiful use of tepid diluents and warm covering. After these applications the distemper never formed itself, as it ever did when these complaints were neglected; although many had a brisk acute fever after, or in the time of their administration, for the space of twelve or twenty-four hours, of the same nature with this fever when once formed; and all were less or more feverish in the time of their sweats, which, however, went off with them, and never returned.

In all those that were bled, even in these circumstances, the blood was thin, watery, and seemingly dissolved, and that in winter; a very uncommon thing at that time of year in Virginia. Some few were seized so suddenly as not to give room for this method of prevention; which, however, in most, proceeded rather from inadvertency and neglect of a slight sudden disorder, for want of knowledge of what it meant, than from want of warning.

But although I can say that I never knew this prophylactic method fail where it was rightly tried; yet we cannot always perhaps expect such good effects from it: still, even then it might be well worth while to put it into practice in these circumstances in all large families, towns, camps, or ships, in which this distemper has chiefly raged in America; for it has chiefly got among sea-faring people, who sail these seas, and has been twice brought to Virginia by his majesty's ships of war, from whence great loss is sustained, both in private commerce and the transaction of public affairs; which may make any account of it there more interesting, for if it were to prove ineffectual for preserving against it, yet it seems to be the best preparative for the body to undergo the disease. Nam prima et præcipua in medicatione indicatio est, ut venenum susceptum ocyus citius e corpore pellatur. Jam vero miasma contagiosum primo omnium salivali sese immiscet latici, cum hoc ad ventriculum descendit et inde ad sanguinem transfertur. Hinc optimum utique consilium, ut venenum brevissima, qua subiit via, iterum exturbetur, simulatque cruditates primæ regionis, quæ deleteriam ejus virtutem mirifice intendunt per stomachic os everrantur. Sed opus est ut cito id fiat, simulac quis se infectum et languorem cum cardialgia sentit, &c. Hoffman. Medicinæ Syst. vol. iv. p. 299, 300.

In this manner we come to use emetics safely in this disease, which are supposed to be necessary by many, and sometimes much relied on; as they do, indeed, when given time enough, help to prevent its worst symptoms, although they are little less than fatal in them; so that it may be truly said of them, what Celsus said of bleeding in an apoplexy, 'They either kill or cure.'

The bounds of this epistle will not allow me to be particular about several remarkable things which occur in this

disease; especially in the cure of it, and in the consideration of the different *lædentia et juvantia;* but I shall take notice of four things indicated in the cure, which, if duly complied with, afford much relief at first, and security at last, and which seem to be the chief, from which art seems to afford any considerable and signal assistance to nature.

The first and chief scope of the cure is to conquer the power of the disease, before it has produced any of its ill effects on the body, so as to render it more mild and tractable, than it usually is, when left to take its course; else the event will be precarious. The worst of these effects, and most to be dreaded and avoided, as we may learn from the above dissections and course of the disease, proceed from an inflammation of the viscera. The principal way to prevent which, is generally to be by large evacuations at first; so that the chief indication of curing this disease is the same as in other inflammatory fevers, viz. to keep off any local inflammation, or more universal obstruction of the capillaries by evacuations. Plentiful bleeding is a means commonly found most effectual to obtain this end in the benign inflammatory fevers; but we cannot apply this most effectual remedy in this disease, because it evacuates only or chiefly the red globules of blood, which as we see by its state taken notice of above, are in too small a proportion already; and bleeding further breaks the texture of the blood, which above all things is to be avoided in this disease: for after plentiful bleeding the pulse sinks, or at least is so low and feeble about the state of the disease as to prove of dangerous consequence; which some instances I have known seem to confirm. So that the only way to make this necessary evacuation at first, is by such outlets as discharge the serous dissolved parts of the blood, and perhaps the miasma

of the disease within them, but leave the globular part, that strength of the body, whole and entire. For a discharge of these, by bleeding, causes that debility which cures other inflammatory fevers, but is one of the pathognomonic or most threatening symptoms of this; whereas a discharge of the dissolved serum, which distends and burdens the capillaries, the springs of action, restores that strength, which is ever to be desired and aimed at in the cure; not by cordials, &c. as is the common practice, but by evacuating that matter which thus oppresses the body and impairs its strength. But I would not be understood to discard bleeding entirely, which I have generally found serviceable in small quantities, and necessary to make way for other evacuations; but it cannot be depended on as a sufficient evacuation, to keep off the impending inflammation.

I. There are but two passages by which we can drain off the over-abounding serum or dissolved blood; to wit, the outer or inner surface of the body by means of sudorifics or cathartics; for the evacuation by urine is uncertain, and not always in our power. Sweating takes place in this as in most other pestilential diseases. By this manner of evacuating, we can drain off the greatest quantities of the dissolved humours, and make the largest evacuation that can be safely made, which seems to put a stop to the violence of the fever, and the danger of inflammation; but it must be observed, that the heat of the medicine, which procures this evacuation, often frustrates the good effects to be expected from it; for which reason the sweats ought to be increased to such a degree, that the largeness of the evacuation may cool the body more than the medicine which causes them heats it; to which plentiful dilutions ought to contribute. From a neglect of these necessary cautions, this method of sweating often contributes to bring on an in-

flammation, when antiphlogistics are really indicated. Two things ought to be observed and duly complied with, to render this method of cure safe and beneficial, and never detrimental or hazardous. 1. That there be no great dissolution of the blood, nor colliquation of the humours, when it is put in practice. 2. That the spasms and constrictions of the fibres, very remarkable, and easy to be discerned in this disease, and inflammation of the viscera, be not come on, when we give any heating sudorific medicine whatsoever. On this account it is, that this method of cure is not so successful in our cold winter and spring weather, when the humours are more sizy, the fibres more rigid, and the body more dense and less perspirable, by which we do not sweat so freely and plentifully as is necessary; on which account I have known this method of practice brought into such disrepute as to be entirely laid aside; whilst at other times, in a milder distemper, it has been used successfully.

II. When the sudorific course has been neglected, or cannot be attempted with safety, on account of the sudden and violent symptoms, height of the fever, plethoric habit, or load of humours in the stomach and intestines, or other abdominal viscera, or has not been so successful as might be expected; then the only relief that I could ever find from any application, is from the mild relaxing chologogue apozems, taken frequently in such quantities as to keep up a constant diarrhœa, rather than speedy purgation, till there remains no further danger of an inflammation. This is often the first thing necessary to be done; for the great quantity of humours proceeding from the dissolution of the blood, which now possesses a greater space than when compacted into red globules, and the quantity of choler which is generally poured out of its ducts, joined with the other impurities of the first passages, which add much to its quantity and

ill effects: these, I say, cause such a turgescency of the morbid matter, as it is called, at the beginning, that nature is never able to rid herself of these two loads, unless they are partly drained off at first by vomiting or purging. This is the practice of both the ancients and moderns in like cases: for, in this case, sudorifics endanger an inflammation which can hardly be avoided in the use of them, wherever there is a plethora of the vessels, or any fullness of the body; for which reason, all those who abound with humours of another kind, or have a great proportion of fluids to their solid parts, stand in need of this timely evacuation: and this is the condition of most of your well fed Englishmen and other new-comers to America, who have not undergone the sudorific course of our summers

But it must be observed, that this evacuation is more necessary in this, than in most other fevers; even so as to become more beneficial than any other, as I have experienced, although it is generally neglected in other malignant fevers; for which reason, I shall sum up in a few words the principal reasons and observations, which show its usefulness. The abdominal viscera are the parts principally affected in this disease; but by this timely evacuation, their feculent corruptible contents are discharged before they corrupt and produce any ill effects; and their many emunctories and secerning vessels are set open, so as to allow a free discharge of their contents, and consequently a security to the parts themselves, during the course of the disease. By this evacuation likewise, great part of the offensive overabounding serum of the blood is discharged in time. The very minera of this disease proceeding from the putrid miasma, fermenting with the salivary, bilious, and other inquiline humours of the body, is sometimes eradicated by timely emptying the abdominal viscera, on which it first fixes;

after the discharge of which, a gentle sweat does, as it were, nip it in the bud. Where the primæ viæ, but especially the stomach, are loaded with an offensive matter, or contracted and convulsed with the irritation of its stimulus, there is no procuring a laudable sweat, till that is removed; after which a necessary quantity of sweat breaks out of its own accord; these parts promoting it, when by an obsterging medicine, they are eased of the burden or stimulus which oppresses them. Hence I have often seen a more laudable and copious relieving sweat break out after such a deterging medicine given even in the height of this disease, than after a sudorific. Premature evacuations are generally dreaded in most fevers, especially such as proceed from a depravation of the inquiline humours of the body; but these contagious malignant fevers proceed from a venomous miasma received ab extra; which, like all other poisons, ought to be discharged as soon as possible, qua data porta. The morbid matter in other pestilentials may be most easily and conveniently discharged by sweats; but this fever requires discharges from those parts, which secern the most viscid humours from the blood, either to prevent or carry off the viscid humours which cause the yellow effusion, which we have shown to be bile, or of the nature of bile: and the rule for evacuations is, 'quæ educere oportet, quo maxime vergunt, eo ducito, per loca convenientia,' (Hippocr. Aph. 21. §. 1.) But bilious humours are only to be discharged by stools or urine, which are the passages by which nature rids herself of this disease, as we shall see below. (Galen. Com. in l. c.)

This is only the inverted method of the alexipharmic, in which we first sweat and afterwards purge; whereas in this method we make discharges of the redundant humours, which oppress the parts principally affected, after which sweat breaks out of its own accord, or is more easily pro-

cured by art. All concerned in the cure of this fever will find both these evacuations necessary; but which ought to precede the other, the skilful may be helped to determine from these considerations, joined to the following observations.

There are not wanting many other practical observations to support these reasons for timely purging in this disease. 1. This method I was directed to by nature herself. I observed that moderate, thin, bilious tools, raised by nature for a day or two, at the beginning, prevented in a great measure the yellowness at the height of the distemper, which then terminated by sweats. And endeavouring to imitate these efforts of nature, I obtained the same good effects, from the like stools procured by lenitives. This is the best guide and surest warrant for physicians to direct their practice by, whose business it is to imitate nature by art. 2. Several, treated in this manner, had no relapses, which all had here in Virginia in the winter and spring seasons, that were treated in any other manner. Does not the doctrine of Hippocrates confirm this practice? who tells us, that improper and untimely discharges in distempers, or those things that are left behind after a crisis occasion relapses. (Epidem. l. 4. 1132.) 3. Where the crisis is by sweat, relapses are dangerous and frequent; but where the bilious humours are carried off by stools or turbid icteritious urine, at any time in the disease, the relapse is but slight, and seldom or ever mortal. 4. In young persons under the age of puberty, of whom I have cured many, and in whom sweating cannot safely be attempted, this fever is as easily subdued, for the most part, and in the same manner, as their other fevers, which proceed from a load and corruption of the humours in primis viis, generally are; to wit, by absorbents, attemperants, and antispasmodics, min-

gled with clysters and lenitives, at any time in the disease; by these, the fatal convulsions and hemorrhages in those and other tender people are prevented. 5. Sweating can only be safely attempted in the first hours of the disease, whilst the matter is fluxile; which short lived opportunity is generally let slip, and sometimes does not offer; after which, the only security against an inflammation of the viscera, is to be expected from lenitives given in the remissions, but not in the paroxysms of the fever. But it must be observed, that however these evacuations may prevent, yet neither one nor the other cures such inflammations till after concoctions; and that purgatives are offensive on account of their stimulating, as sudorifics are for their heating quality; for which reason they ought not to be given after any signs of an irritation of the vessels or spasms about the præcordia, severe anxieties, contractions of the hypochondres, or convulsive motions of the stomach: and none but the mildest diluting laxatives are ever proper, such as whey made with cremor tartari, or tamarinds, potions of manna and rhubarb, or solutive syrup of roses, a mixture of rhubarb, sal. nitr. in broth or gruel, or aperient relaxing apozems given in divided doses.

III. The next thing necessary to be considered in the cure, is the concoction (as it is called) of the morbid matter, whereby to render the remains of the morbid humours which have not been carried off by previous evacuations, but keep up the fever, a yellow effusion or inflammation of the viscera, fit to be separated and expelled in due time by proper evacuation. We need not dwell so long on this, although of great consequence in the cure, as it is to be effected by the same means as in other malignant fevers, where the same indications prevail: but the chief thing here is to establish a

true indication of cure for this disease.* On this account, it will be necessary to consider what are the indicantia and state of the body and proximate causes of this disease, which I shall do only in general; each particular symptom and the various cases which occur in practice would require a treatise by itself to discuss them thoroughly. The following seems to be the state and condition of the solids and fluids in this disease from whence the indications of cure ought to be taken. 1. The fluids are manifestly dissolved from the beginning by the miasma of the disease, and are much more so by the effects of the fever succeeding it. 2. The blood is much accelerated in its motions, when it is thin, dissolved, hot, and acrid: to this succeeds an effusion of a rancid, oily, adipose humour, or a more pernicious, heated, acrimonious bile about the height of the fever. Hinc illæ lachrymæ! 3. The solids are not rigid, and the body dense and imperspirable, as in most other acute continual fevers; they are rather lax than weak; the dissolved blood is not able to keep their diastole; but they are apt to be drawn into spasms and convulsions, as weak fibres generally are, by the heated, accelerated acrimonious humours, especially in the more sensible membrane about the præcordia. 4. Hence a stagnation or inflammation in those membranes, especially the stomach and contiguous viscera: which as it proceeds from a thin, hot, acrid blood, or bilious humour, is of the erysipelatous kind. This seems analagous to pleuretic inflammation in other acute distempers, and in like manner is produced from the effects of this fever. 5. These bring on an universal spasm or systolic motion of all the nervous membranous parts; hence the arteries are contracted or nigh to a con-

* Id probi distinguendum et probi noscendum, &c. Bagliv. de Febr. malign.

tinued systole, as is felt by the pulse, which makes the dissolved blood, lymph, and bilious, oily humours stagnate in the extreme capillaries; whence mortification of the inflamed parts. From these causes likewise the blood will be drove out of the more rigid contractile parts; the muscles, &c. will be accumulated in greater quantities in the weaker, laxer glands, and in the more dilatable, spongy, viscera; the liver, spleen, pancreas, omentum, mesentery and lungs; whence, in the dead bodies, these parts were distended and gangrened, and the blood drove out of the other vessels into the venæ portarum, which proceed from, or tend to those softer viscera, where the circulation is slowest. But in all this the brain was not affected in the dead bodies, nor did it appear to be so in the disease, but by consent of the nerves and stomach: perhaps the rigid contractile dura mater and superior situation or distance from the stomach and præcordia, which are most affected, defends and preserves it. In these circumstances the following indications seem naturally to occur, besides the evacuations already taken notice of. 1. To prevent the dissolution of the blood by correcting the acrimonious salts of the peculiar miasma, heat, and biliary acrimony of the fluids, which seem to occasion it. 2. To relieve or guard against the spasms of the vessels. 3. To remedy the inflammation, and prevent the sphacelation of the viscera; especially those situated in the hypochondres. The particular remedies which I found most successful to answer these indications of cure, were the following: aqueous diluents are well known to be serviceable in all acute diseases; but besides their moistening, cooling, diluting quality, they are serviceable in a peculiar manner in this disease; they are generally earnestly desired and greedily swallowed, in large draughts, on account of the heat at the stomach, which draughts distend the stomach, that is often closed and con-

tracted; this loosens the spasmodic constriction, as the anodyne quality or pleasant sensation which such draughts afford, procure a pause from the grievous restlessness; but when the convulsed stomach acts on such a full load, it throws it off both upwards and downwards, by vomiting and purging, which evacuate that offensive humour, impacted on its tunics, or floating on its contents (as was observed in one of the dead bodies above,) that causes the worst of all the symptoms, the cardialgia and anxiety; so that such large draughts of grateful aqueous liquors should not be denied the sick in this disease. For I have seen them procure as much speed, relief, and security, as could be expected from opiates in many sorts of pain: but some would give them cold, as they are coveted, which is dangerous in inflammation of the viscera, (Alexand. Trall. lib. 12. c. 3.) particularly in an erysipelas of the stomach. But diluters alone are not sufficient in this fever. It is further necessary to guard against the heat and acrimony of the humours by attemperating, incrassating, cooling remedies, such as decoct. hord. oryz. absorbents, &c. &c. but above all the acrimonious salts of the pestilential miasma, which dissolved the blood, are to be corrected, which as they proceed, in all probability, from putrid animal substances, are best corrected and destroyed by acids;* which were found to be of service in this disease. But there is much in the choice of acids; the harsh, mineral acids, irritate and fret the stomach: the mild, native, vegetable acids, well diluted, only agree with it. Acids rather prevent than cure the inflammation of the stomach. Where

* Hales Hemast. p. 325. Boerh. Chem. vol. ii. p. 314. &c.

the retchings to vomit are great they should be sparingly used. Acids should not be given alone, on account of the stomach, but with a mixture of some alkaline absorbent or warming alexipharmic; and in such a proportion as to make the mixture sub-acid and cooling; which mixtures agree with the stomach, and are more aperient. But acids are not to be depended on alone, as those who follow an empirical practice, and have a notion of their correcting and assuaging the heated bilious humours, pretend. They thicken the fluids, and stop and prevent those evacuations which seem necessary to carry off the fever, and expel the pestilential and yellow effusion. Nitrous medicines are to be used sparingly, unless mixed with camphor in small quantities.

But it is not these or any other method of cure commonly used, that will always prevent the mortification of the viscera, which ever seemed to be the fatal catastrophe of this disease; and was ever found to be in all the dead bodies that were looked into. For this reason it behoves every one who has a regard for the art, or welfare of mankind, to look out for new remedies, to prevent such a fatal issue, not only of this, but likewise of other pestilential diseases. When I first perceived that the event and tendency of this disease was to a mortification, I thought of the bark, the antiseptic virtue of which had been so well demonstrated and exposed to the world; and which I have known some instances of in Virginia. Had I at the same time known of its good effects in the small-pox, which I have been since informed of, from the Edinburgh Medical Essays, (as well as by Dr. John Fothergill in London, who advised me to the use of the bark in it, from the resemblance that this disease bears to the small-pox, and informed me of three cases of a disease like this in Minorca,) I should have been more bold in such a practice, which seems the only known way of snatching many

from the jaws of inevitable ruin. For the effects of the bark in gangrenes seemed to be to promote a laudable suppuration, which would avail but little in the parts affected in this disease. But we are informed (Edinb. Med. Essays, vol. 5th) that in the small-pox it promotes the maturation and concoction of the morbid matter, and abates the fever. This is what is wanted, when this disease tends to its fatal issue; and I can assert from my own observations of both, that both the symptoms, causes and effects seem to be much the same; at least not unlike in both these diseases, when they tend to their fatal issue, for want of this due concoction of the morbid matter, for which the bark has been successfully given in the small-pox. But does the good effects of the bark in that distemper proceed entirely from bringing a kindly suppuration into the pustules? Surely there is nothing more wanted in all these malignant pestilential distempers, such as both these are, than to preserve the tone of the fibres and crassis of the blood, both which seem to be destroyed in these diseases, especially this I treat of, when they tend to a gangrenous state; but nothing seems to be so effectual for this as the bark. It is the common practice to endeavour to remedy this deplorable case, or to satisfy this vital indication by heating cordials, as they are called; the same was the practice in much the like circumstances in gangrenes from internal causes, before the more efficacious use of the bark was known. But these are the most pernicious of all medicines, even in these circumstances of this disease, as I have seen by many instances. It is true, in other fevers these stimulating attenuating medicines become necessary towards their decline; when the mortal laxity of the fibres and grumosity of the fluids threaten a stagnation, even where they were little less than poisons at the beginning. Some such thing is wanting in these circumstances in malignant fe-

vers with dissolved humours, both to prevent this gangrenous disposition of the humours and sphacelation of the viscera, as well as to satisfy this vital indication which is most prevalent in them; but no medicine seems to answer; for these heating, stimulating cordials only further dissolve the broken texture of the blood, and instead of relieving sweats, promote colliquative evacuations, and occasion spasms and convulsions of the fibres instead of restoring or preserving their tone. But in these circumstances, in malignant fevers with dissolved blood, the bark seems to be the only promising remedy: but this, however, I should nor have dwelt so long upon at present, had I not known the bark to be given in this distemper; to wit, about the height of the fever or state of the disease, when the fatal condition was just at hand, and that to the quantity of more than half an ounce of the powder in usual doses in a day's time; after which the person recovered, which would hardly have been the case in most other acute continued fevers, of the violence of this. I must own this is but a single instance, and not made with sufficient accuracy to determine so important a point; and I know the dangerous consequence of drawing general rules from particular observations, the bane of physic, and reproach of human reason: so that I cannot any further recommend or condemn this practice, but think it for many cogent reasons highly worthy the further consideration of the skilful; on which account I could not pass over this mention of it.

But whatever may be the effects of the bark in this disease, yet I know it to be often necessary and useful after it. There is a greater debility generally remains after the crisis, and the pulse is weaker and lower, than after any disease I ever saw; the solids seem to have lost their elasticity, and the blood its due crasis. This makes purging, to prevent a relapse, dangerous. At other times this fever, from an imper-

fect crisis, degenerates into a slow periodic fever, of long continuance. In these conditions, several lose their lives; but I have known others, who seemed to be in the like danger, to be saved by the bark: I have been informed by several judicious eye-witnesses, that this was the case of the soldiers and sailors in the late American expedition; great numbers of whom died in this lingering condition after the fever.

After the morbid humours are prepared or concocted, the next thing necessary to be considered, is the evacuation of them; in which three things are to be considered. 1. When any artificial evacuation is necessary to relieve or assist nature. 2. What kind of evacuations are most proper; and 3. The proper time for these evacuations.

As to the first, we must remember what we have above hinted; that about the time when the yellowness appears, or about the state of the disease, the pulse turns extremely weak and low, the debility is increased, and nature is unable to rid herself of any offensive burden, at a time when she stands most in need of it: this it is, that makes artificial evacuations necessary to assist the feeble efforts of languishing nature. It is true, the sole hopes of many, in these circumstances, are placed in cordials, to strengthen the body, as is the plausible pretence; and evacuations are then dreaded above all things, on account of the debility which it is feared they may increase. But the body is not to be strengthened, but by removing what weakens and oppresses it, which seems to be here the dissolved serous and bilious humours stagnating in the capillaries, or thrown on the viscera. And all these acute putrid fevers ever require some evacuation to bring them to a perfect crisis and solution, and that even by stools,* which must be promoted by art, where

* Una igitur alvi spontanea solutio atque perturbatio continuam febrem tuto ac perfecte judicat, &c. Fernel. Feb. cur. Method. c. 8.

nature does not do the business herself. On this account an ill-timed scrupulousness about the weakness of the body is often of bad consequence in these urging circumstances, for it is that which seems chiefly to make evacuations necessary, which nature ever attempts, after the humours are fit to be expelled, but is not able to accomplish, for the most part, in this disease. And I can affirm, that I have given a purge in this case, when the pulse has been so low, that it could hardly be felt, and the debility extreme; both one and the other being restored by it. Another thing which makes artificial evacuations the more necessary now, is the diffusion of a new morbid matter through the blood, which causes the icterus different from that which first brought on the fever, when nature is almost overcome by the conflict with the first. Evacuations are likewise the more requisite at last, if the necesary ones have been neglected at first.

The next thing to be considered, is the kind of evacuation to be promoted; the most beneficial I have always found to be procured by lenitive cholagogue purges. Sanctorius indeed tells us, that the matter of malignant fevers is discharged by insensible perspiration, which is the general aim of physicians to obtain in these kinds of fevers, in which they seldom consider that hardly any putrid continual fever comes to a perfect crisis by sweats alone.* But in this particular fever, whenever any yellowness, even in the eyes, appears, we are entirely frustrated in our expectation of any relief from diaphoretics, in order to carry it off. This icterus proceeds from a matter which seems to be too viscid to pass off through the narrow pores of the skin, and never goes off entirely and perfectly by any ways whatever, whether the contrivance of nature or art, that ever I could observe, but by a turbid

* Fernel. Feb. cur. Method. c. 8.

yellow lateritious urine or loose stools. The same observation is confirmed by Hippocrates, who adds to these salutary discharges, in an icterus coming on a fever, a plentiful bleeding at the nose. (Epidem. l. 1. § 3.) Nay, the fever itself, when little or no yellowness appears, is hardly to be carried off entirely without purging; for when this indication is neglected, when it first offers (all changes being generally sudden) the fever returns with exacerbations, like the putrid fever coming after an imperfect expulsion of the variolous matter in the small-pox; and as often proves mortal in this case, as in the other. It is true we do sometimes see the fever brought to an apyrexy without purging, when accompanied with little or no yellowness, but very seldom when it is; but even then the crisis is imperfect, and the distemper is subject to frequent and severe relapses; and often degenerates into a slow periodic and long continued fever which gradually wastes and consumes the body, when this necessary rule of practice is not rightly complied with in time.

And here I cannot pass over a further comparison of the method of curing this distemper and the small pox, in both which purging is found of equal benefit, much in the same circumstance. They both proceed from a subtile contagious miasma, which brings on the fever at first; towards the state or decline of which, another foreign, more viscid, ill conditioned, matter, gets into the blood; to wit, the variolous matter in one, or bilious humours in the other; which raises a new conflict from a different cause, which is hardly to be overcome but by evacuating this foreign matter by purging. The only danger of this evacuation in both diseases, which some complain of,* seems to proceed from the crude state of this matter, when it is either not

* Allen, Synop. Medic.

rightly prepared or duly determined to proper emunctories for an expulsion, like the febrile matter in other acute diseases. The proper time for this evacuation next to be considered, is the first signal remission of the fever, or abatement of the most threatening symptoms, after or about the state of the disease, which we have said, is generally on the fourth day here in Virginia; or when any signs of concoction appear in the urine, especially if it is yellow and turbid, or other signs which indicate purging in other acute distempers, are observed. (Vid. Helvet. Anim. Econ. p. 44) But if there is no exacerbation or paroxysm of the fever on this fourth day, which is generally a promising sign, and none of these symptoms appear which denote an inflammation, or threaten a gangrene of the bowels, then I have ordered a purge with signal relief and good effect in the height of the disease, before few or any of those signs appeared; thereby preventing the yellowness in a great measure, which was to be expected that or the next day; and obtaining a perfect and entire crisis, by copious sweats, ensuing after a few loose stools. It is true the necessary maxim, cocta non cruda sunt medicanda, ought to be had regard to in all diseases; but as little in this as in any other, on account of the necessity of evacuating the bilious humours, which can only be carried off this way. So that if a purge at this time could always be safely given, it would afford more relief than all the applications generally used; for the icterus and dangerous conflicts which it raises, are thereby in a great measure prevented, the good effect of which are so signal, especially if purging has not been used at first, that they are apparent to all who have ever seen the course and event of the disease without them. But in all acute diseases, there is great caution requisite in applying remedies of such signal efficacy; especially where the humours are dissolved.

the disease so severe and acute, and the debility so great as in this distemper. For as Hippocrates tells us in general. Quod prodest, ob rectum usum prodest. So where there is a critical dissolution of the blood, or collection of the humours, it is unsafe and prejudicial. At other times this fever is of a lypirian, which, as Hippocrates tells us, is not to be carried off, but by a cholera (Coac. l. 4. aphor. 6.) which I have seen verified more than once in this distemper. But the discharges in this, vomiting and purging, are rather of the colliquitive kind; which colliquitive discharge happens at other times; both which ought to be stopped or moderated; for which purposes I have found the same good effect from warm opiates, (theriac. laud. liq. cum pulver. bozoard. absorbent. aq. alex. &c.) as from purges at other times. So that there is no depending on any general method of cure in the different cases of this disease, however specious or successful at some times: but circumstances must be well considered and rightly judged of, by those who would avoid the imputation of Pocteus Neapolitanus. Multi sunt morbi, in quibus, si medicus erret aliquando tamen parum, et quod vix notari possit, nocet: ubi vero obligeret magnus, fortis et periculosus morbus, tunc ipsius imperitia haud levia adfert incommoda. Paraph. in Hipp. de veter. Medicin.

REVIEW.

ART. I. THE LECTURES, *corrected and improved, which have been delivered for a series of years in the College of New-Jersey, on the subjects of* MORAL *and* POLITICAL PHILOSOPHY, *by the Rev.* SAMUEL STANHOPE SMITH, D. D. LL. D. &c. &c. New-York. Whiting & Watson. 8vo. 2 vols. Vol. 1st. pp. 324. Vol. 2d. pp. 386. 1812.

(Concluded from our last.)

HAVING now taken a survey of human nature, as composed of body and spirit, he enters into a more immediate analysis of its powers. These powers may be comprehended under the head of sensation, of sentiment, of imagination, of reasoning, of reflection, of volition, and of the moral principle. Sensation is either external or internal. External sensation is that perception which we have of objects without the mind, and their qualities, through the instrumentality of the corporeal organs of sense. Internal sensation, on the other hand, is the perception we have of the operations of our own minds by the inward powers of consciousness. Sensations also, are divided into those which are secondary, such as our perceptions of grandeur, beauty, proportion and harmony in objects. In treating on the nature of the external senses, and the manner in which they impart the knowledge of their objects to the mind, without attempting to explain the mode in which matter acts upon mind, which is probably one of the impenetrable arcana of nature, or adopting the ridiculous jargon of Hartley's vibrations, he assumes merely as a given truth, that

the notices of external things are conveyed to the mind through the instrumentality of the nervous system, a doctrine generally admitted, whether by a vibratory or longitudinal action in them, is of no importance, and upon this foundation he rears a theory of spectral visions and of dreaming, in the highest degree ingenious, and well worthy the perusal of all, who would cleanse their minds from the feculence of vulgar prejudices, and rid themselves from their idle fears of spectres and apparitions, the offspring of ignorance and timidity, nursed by superstition. I cannot give a more brief and intelligible statement of this theory, than in his own words.

"The nerves consisting of very vibratory* strings, or elastic filaments, easily excited into movement by an infinite variety of external impulses, or internal agitations, if their motions, vibrations, or other affections are the immediate causes of sensation; according to this theory, then, by whatever impulse any motion, vibration, or affection in the nervous system is produced, a correspondent sensation, or train of sensations or ideas in the mind, will naturally follow. When the body is in regular health, and the operations of the mind are in a natural and healthful train, the action of the nervous system being affected only by the regular and successive impressions made upon it by the objects of nature as they successively occur, will present to the mind just and true images of the scenes that surround it. But by various species of infirmity and disorder in the body, the nerves, sometimes in their

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* Some respectable writers deny the vibratory motion of the nerves, ascribing to them rather a perpendicular movement through their whole length, agreeing, however, in the general principle that sensation is produced by some mode of nervous motion as its immediate cause. The reader who embraces that hypothesis may substitute his own peculiar opinion, or mode of expression, for the vibratory motions supposed in the text. The result of the reasoning will be the same;

entire system, and sometimes only in those divisions of them which are attached to particular organs of sense, may be subjected to very irregular motions or vibrations. If any vibrations be excited in them similar to those which would be created by the actual presence and impression of external objects of any form or quality, unreal images of the same qualities and forms will be raised in the mind. Examples in illustration or proof of this fact may be adduced from each of the senses. Light may seem to flash from the eye in consequence of a stroke. The ear may often be vexed by unreal sounds, and the eye by unsubstantial visions. The state of the nervous affections may be vitiated by intemperate indulgence, or by infirmity resulting from sedentary and melancholy habits. Superstitious fancies, or enthusiastic emotions, do often greatly disturb the regular action of the nervous system. Such elastic and vibratory strings may be subject to an infinite variety of irregular movements, sometimes in consequence of a disordered state of health, and sometimes arising from peculiarity of constitutional structure, which may present false, and often fantastic images to the mind. Sometimes a violent concussion on the head, or a lunatic affection of the brain, or the delirium of a fever, may produce such an irregular state of nervous action as to fill the imagination with wrong, imperfect and confused conceptions, which become the cause of all the disorders that mark the discourse and conduct of persons affected by these maladies. For, in madmen, and persons under the influence of a delirium, it is not so much the reasoning faculty that is impaired, as the sensitive powers which are disordered; and, presenting false images to the mind, become the occasions of its erroneous conclusions. The errors of reason, in such cases, it is true, frequently arise from the rapidity and confusion of images crowding upon the fancy, which deprive it of the power of fair leisurely comparison, and of forming its inductions from a complete possession and survey of its ideas.

"But returning from this train of reflection, permit me to offer to your consideration a few examples of false impressions, appa-

rently arising from some of the causes which have been just suggested. You may not rarely meet with persons of enfeebled frames, or sedentary habits, who suddenly rising from continued reading, or intense thought, have, by the irregular and vacillating movement communicated by the effort to the brain and optic nerve, perceived repeated gleams of light flashing around them. But no cause, perhaps, produces a more anomalous oscitancy or vibration of the nervous system, or of some particular portions of it, than habits of intemperate indulgence. And I have not unfrequently become acquainted with men who had been addicted to such excesses, who were troubled with apprehensions of supernatural apparitions. A peculiar imbecility of constitution, however, created by study, retirement, or other causes, may be productive of similar effects. And sometimes these nervous anomalies are found in men who are otherwise of active and athletic constitutions. But where they possess enlightened minds and vigorous understandings, such visionary tendencies may be counteracted by their intellectual energies. Yet have we sometimes known the strongest understandings overcome by the vivacity of nervous impression, which, frequently, is scarcely inferior to the most lively ideas of sense. This may, especially, be the case in two very opposite conditions; either, when the body has fallen into a gloomy temperament, and the mind is weakened by fears, in which case it is oppressed by distressful apprehensions; or, on the other hand, when the nerves, the primary organs of sensation, are strained into an unnatural tension, and the whole system is exalted by an enthusiastic fervor to the pitch of delirious intoxication. When a man is exalted to such a degree of nervous excitement, and mental feeling, his visions are commonly pleasing, often rapturous, and sometimes fantastic; but generally rise above the control, or correction of the judgment. The younger Lord Lyttleton, in the vision which he believed he saw of his deceased mother's form, shortly before his own death, may be an example of the former; and the Baron Von Swedenburg, in his supposed visions, sometimes of angels, and sometimes of reptiles, may be an instance of the latter.

"It is of importance to remark, that the imagination which, according to this theory, is waked into action by nervous vibrations, and is furnished by their instrumentality with the materials of all the pictures, real or imaginary, which she is perpetually forming, has also a powerful reaction on the nervous system. According to its present tone, whether affected by superstitious dread, by melancholy terror, or enthusiastic rapture, or by any other strong and sudden impulse, it appears to have the power of recommunicating those vibratory motions to the nervous system which tend to giving complete form to those incipient images in the mind that correspond with its actual state of excitement; especially in persons whose fancies have been much disturbed in early life by the tales of nurses, and other follies of an injudicious education. The tenseness and force of the vibrations in the nerves attached to the respective organs of sense created by these vivid emotions of the mind and fancy, give intenseness to every sensible impression. Whence sounds will be augmented to the ear, and images be made more glaring to the eye. Take for an example, the effect of some unknown and frightful object in the dark, on a timid and superstitious mind. Its fears are alarmed; they seize upon the imagination; the indefinite outline of some terrible image is suggested to it, according to the accidental state of feeling at the moment. Immediately, the imagination, which is always prone to give shape to its images, bodies forth some direful form. As soon as the first alarm has awaked this picture-working faculty, it instantly creates before the mind an image, which is only the completion of the confused and indefinite form which began to be traced, in consequence of the original shock. And, by its reaction on the nerves, gives to the portrait of the fancy a sensible subsistence, and a name. The pictures created by an enthusiastic temperament are generally of a cheerful kind; those resulting from a melancholy superstition, are more gloomy; but both are explicable by the same, or a similar analysis of the operations of nature."*

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* One or two examples of known facts may contribute to render our ideas on this subject more intelligible, and to justify the principles on which we have pro-

In like manner he gives a rational solution of the irregular and desultory phœnomena of dreaming. From illustrating and establishing his theories of spectral visions and of dreaming, he proceeds to the consideration of the external senses,

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ceeded in our illustration. I knew some years ago, a very worthy lady who, anxiously watching by the cradle of a sick infant, and momently expecting its death, felt, as she believed, just before it expired, a violent stroke across the back of both her arms. From a tincture of superstitious apprehension infused in her early education, and unacquainted with any natural cause of such a phenomenon, she construed it into a preternatural signal of the death of her child. It was probably a sudden and convulsive contraction of the muscles in that part of the system, occasioned by the solicitude of her mind, and the fatigue of watching, which, aided by imagination in a very interesting moment, produced a shock that had to her the feeling of a severe concussion. That a convulsive contraction should take place in those particular muscles, need not appear strange to those who know how irregular and uncertain is the whole train of nervous action, especially under the operation of some disorders of the body; and frequently, under the influence of strong affections and emotions of the mind.

"A young lady, who was peculiarly susceptible of the impressions of fear in the dark, or at the sight of any of the accompaniments of death, attended the funeral of one of her intimate companions, who had died of the small pox. On the following night she lodged in company with a female friend of great firmness of mind. Waking in the night some time after the moon had risen, and faintly enlightened her chamber, the first object that struck her view was a white robe hanging on the tall back of a chair, and a cap placed on the top. Her disturbed imagination instantly took the alarm; and in her agitation and terror, rousing her companion, she exclaimed violently that her deceased friend was standing before her. The lady, with great presence of mind, brought the articles of clothing, which had caused the alarm, and thus composed her fears. After she had become tranquil, and was able distinctly to recal her sensations, she declared that the perfect image of the deceased, just as she was dressed for her coffin, seemed to be before her sight. She contemplated it as long as her fears would permit her, before she exclaimed. She was sure that she recognized every feature of her friend, and even the pits of the small pox, of which she died, in her face. And she affirmed that before any tribunal she would have been willing to make oath to this fact.

"I have introduced this anecdote merely to illustrate the power of the imagination by its reaction on the nervous system, to complete the pictures that any sudden impulses of the senses, occasioned by surprise, or by superstitious, or enthusiastic feeling, have begun to form. It is not a solitary anecdote of the kind. But I have selected it, because I am more perfectly possessed of the circumstances, than of many others that are circulated through certain classes of society. Nor are these classes always to be found among the most ignorant and credulous.

the smell, taste, touch, hearing, sight. He next treats of the internal senses, those which relate to the acts and sentiments of our own minds, those which relate to the arts, those which relate to morals; our secondary sensations are

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"The story of Lord Lyttleton's vision has been variously committed to tradition. There are some circumstances, however, in which all the narrations, that have been published, concur. His lordship was a man who had worn down to a very feeble state, a lively and elastic constitution, and impaired a brilliant wit, by voluptuous and intemperate excesses. A few days before his death he imagined that he saw before him the perfect resemblance of his deceased mother, who denounced to him that on such a day, and at a prescribed hour, he should die. Under a constrained vivacity, his mind, during the interval, was evidently much agitated. And on the predicted day, and at the prescribed time, he actually expired.

"This fact has been regarded by many persons, and those by no means of inferior understandings, as a decisive proof of the reality of apparitions from the spiritual world; and by others has been attempted to be resolved on a variety of different grounds. The principles suggested in the text may, perhaps, serve to explain it in conformity with the known laws of human nature, if the theory of nervous vibration be admitted to be true, without resorting to the solution of supernatural agents. The irregular and convulsive motions in the nervous system which frequently arise from long continued habits of intemperate indulgence, might be especially expected in a constitution so irritable and debilitated as that of Lord Lyttleton. If, either sleeping, or waking, or, in that indefinite interval between sleeping and waking, their disordered movements could present to the fancy, or excite in the visual nerves, the distinct image of a living person apparently resuscitated from the dead, which has been shown to be a possible case, the debilitated frame of his lordship, agitated as it must have often been, by the conscious apprehension of his approaching end, may naturally be supposed to have predisposed them to such a vision. Conscience, notwithstanding his assumed gayety, somewhat perturbed by the fears of death, and with a recollection of a pious mother, whose anxious admonitions had often endeavoured in vain to recal him from his vices, and to fix his thoughts on his future existence, might naturally retrace her features in this formidable vision. It is not improbable that the whole scene may have been a kind of waking dream. Or if it was wholly transacted in sleep, it might have been with such a forcible and vivid vibration or impulse of the nerves, concerned in the formation of such an image, as would give it the distinctness and vivacity of waking sensation. In the tumult of his spirits, and the fear-excited vibrations of his whole system, it is not strange that the image of that disappointed and reproaching parent, should be presented to him with a solemn and foreboding aspect. And it would be adding only one trait of terror to the scene already so well prepared to admit it, and one that is

divided into various classes, that of sublimity, of beauty, of harmony, of imitative pleasure, and of the ridiculous.

On the active principles of human nature, comprised under the heads of propensity, instinct, habit, sentiment,

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perfectly conformable to our experience of the desultory images of dreaming, as well as what we have learned of similar visionary impressions—that a particular period should be denounced to him for his death, the symptoms, and presages of which, in all probability, he frequently felt in the tremors and palpitation of a breaking constitution. The principal difficulty in the minds of those who have only carelessly attended to this history, is to account for the exact correspondence of the event of his death to the time fixed by the prediction, if it had no other foundation than nervous impression. The imagined prediction itself was sufficient, in a debilitated and exhausted constitution, like that of Lord Lyttleton, to produce its own accomplishment. Seizing upon his fears, in spite of his reason and philosophy, for a life of dissipation and sensual excess, generally, very much weakens the powers both of the mind, and of the body, it would naturally throw his whole system into great commotion. These perturbed and tumultuous agitations would increase as the destined moment approached, till the strength of nature failing, may well be supposed to break at the point of extreme convulsion; that is, at the expected moment of death.

"To a case analogous in many respects to that of his lordship, there are many witnesses still living in the city of Philadelphia. The contrast in the issue of the latter, serves to confirm the solution which has just been given of the former. Mr. Edwards, a clergyman of the baptist persuasion in that city, of a tendency somewhat addicted to melancholy in his habit, but, otherwise, of a vigorous constitution, had, like Lord Lyttleton, a visual impression so clear and distinctly defined that he mistook it for a supernatural messenger from the spiritual world to announce to him that, at the end of a certain period, he should die. He was so persuaded of the reality of the vision and the verity of the prediction, that he took leave of his particular friends, and of his congregation, before the appointed day. On the evening of this day I saw his house filled with spectators and inquirers, awaiting with solicitude the catastrophe of this extraordinary affair. The tumults of his whole system, his difficult respiration, his quick and tremulous pulse, and its frequent intermissions, led many to announce, at various times, during that evening, to the surrounding spectators, that he was just expiring. And without doubt, if his frame had been as weak and delicate as his nervous system, he could not have survived the agitations, and, I may say, almost convulsions, into which he was thrown. And here would have been another prediction, and another supernatural appearance, as extraordinary as those of Lord Lyttleton. But his constitution triumphed; and he remained a monument to prove the force of nervous illusion, which, in this case, as doubtless it has proved in many others, appears to have given birth to an image as clear and definite as could have been

imagination, reason, affection or desire, passion and volition, he delivers the doctrines that have been taught with such resistless force of argument and masterly elucidation in the school of Reid and his illustrious coadjutors, interspersed

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produced by the actual presence of such an object as was supposed to have created it. I would hardly have ventured to relate such an anecdote, if there were not ample testimony to its verity still existing. The good man was so ashamed of his delusion, and it so much lessened his credit with his spiritual flock, that he was obliged to leave the city, and the church where he had formerly been highly esteemed, and retire to a remote position in the country. Many anecdotes to confirm the reality of *nervous sensation*, if I may apply that phrase to designate those *sensible perceptions* which are sometimes raised in the mind, without the presence or aid of external objects, must have occurred to those who have had extensive opportunities of practically observing human nature. With several persons I have been acquainted, and those by no means of inferior understanding, who have been firmly persuaded of the existence of the spectres indicated by such *nervous* affections, and have, on some occasions, held conversations with them, real on their part, imaginary on the part of the supposed spectre. Such perhaps, in general, are the disciples of the Baron Von Swedenburg. But illusions of this nature are not confined to this class of men alone.

"Dr. Van Cleve, of Princeton, was lately applied to as a physician, on behalf of a man who had reduced himself by intemperance, to a state of very distressing nervous irregularity. He was continually disturbed by visions, sometimes of the most frightful, and sometimes of the most fantastic kind. He often heard strange voices; and would ask and answer questions, as if engaged in conversation with some of his visionary personages. His disorder, the doctor said, was evidently not of that species which is usually denominated mania, but appeared to be wholly the effect of a habit of nervous irregularity induced by previous intemperance. But the Baron Von Swedenburg, in his most visionary moments, was never surrounded by more extraordinary assemblages of strange sights.

"A very striking example of the power of nervous impression occurred a few years ago in the Rev. James Wilson, formerly assistant minister with Dr. Rodgers, in the first presbyterian church in New-York. He was a native of Scotland, and was a man highly esteemed for his good sense, and the soundness of his judgment; although not distinguished for a warm and popular eloquence. Being obliged for a time to relinquish the exercise of his ministry from a hemorrhage in his breast, he employed himself for several years in different occupations in Scotland and America, but chiefly in presiding over an academy in Alexandria, in the state of Virginia. The expectoration of blood having ceased for a considerable time, his conscience began to reproach him for indolence and self-indulgence in not renewing his ministerial functions. In this uneasy state of mind, a vision, as he thought, of a man of very dignified aspect, stood at the foot of his bed in

occasionally, with original hints and profound reflections of his own. In regard to the moral faculty, or as it has been denominated by Hutcheson and Shaftsbury, the moral sense, on which subject, we think that Dr. Paley in his

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the morning, after he was perfectly awake, and surveying him steadily, for some moments, commanded him to resume his duties in the pulpit: but added that as considerable error had crept into the church, he should undertake to reform it according to the model of the primitive age. Mr. Wilson, conscious of his want of eloquent talents, and reforming zeal, reasoned with the supposed apparition, alleging his utter incompetency to the task imposed upon him. The dialogue ended in a repetition of the command, and assurance of ability and success. The good man, wholly unable to explain this clear and palpable vision, on any principles of nature or philosophy with which he was acquainted, was deeply distressed; yet, perfectly sensible of his insufficiency for such an undertaking, he neglected attempting to fulfil it. After an interval of two or three years, the vision was repeated, with nearly the same circumstances; except, that the aspect of the person who appeared to present himself, was more severe, and expressive of displeasure at his past delinquency. Mr. Wilson repeated his former reasonings on his want of health, and want of talents, with other topics. But the answer was still the same, a repetition of the injunction, and assurance of the necessary ability, and ultimate success. His distress was raised to the highest degree, in the conflict of his mind between what he thought a sensible demonstration of a supernatural requisition, and an invincible consciousness of his own incompetency, and his fear of doing an injury to true religion by his failure. After consulting several of his friends upon the subject, he at length addressed a letter to the author, stating all the circumstances which have just been detailed. He was answered with the general reasonings contained in this lecture to convince him that his vision was merely a consequence of nervous affection, resulting from bodily disorder. Three letters passed between Mr. Wilson and the author, reasoned on the part of Mr. Wilson with great calmness and good sense, admitting all the objections to such an apostolic undertaking as that to which he was urged, both from scripture and from his own peculiar deficiency of power and talents; but pleading the impulse of a sensation as clear and strong, and, to his mind, as real as he had ever felt. But it was replied, that there were other considerations combined with the whole system and harmony of nature, which ought to have greater authority with a rational mind than any single and individual impression of sense, which evidently violates its general order. The correspondence came to this issue at last, that, as he agreed with the church as she now exists in most of her doctrines, and especially in the moral precepts of religion, he should begin his course by inculcating only those principles in which all were agreed; and if he found the promise of his vision verified in his returning strength, and successful eloquence, he would then have sufficient encouragement to proceed farther. He

Moral Philosophy is peculiarly defective and objectionable, he advocates the opinion of those, who suppose it to be an internal sense distinct from all others, and has this property in common with the rest, that it imparts primary and ultimate ideas on the peculiar subject it was destined to enlighten, which cannot be acquired by any process of reasoning, nor by any other sense or power of our nature. Without elevating it into an infallible arbiter of right and wrong in human conduct, which would be to suppose it bestowed on us by the creator, in a state very unlike that in which all our other faculties and endowments are found, that of absolute perfection, he maintains that it is the only principle of human nature from which we can derive our conceptions of duty and obligation. In treating on this subject, he considers the nature of this faculty, the objects of its approbation or disapprobation, the extent of its influence, or how far it is a universal and independent test of the morality of actions, the end for which it appears to have been implanted in human nature, and then refutes some objections that have been made to considering it as a distinct power of the mind.

The nature of this faculty is to be learned from the nature of the ideas with which it furnishes the mind. They are all of that class which relates to duty and obligation, to moral rectitude and worth and their contraries. Its object are the intentions and dispositions of men, and their external actions chiefly as indicative of these inward principles. As to the extent of the information afforded by this faculty, it is not asserted that it is a universal criterion or

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actually came to New-York with the intention to put this experiment into execution; but died in that city shortly after his landing. He published one discourse introductory to the design."

test of what is virtuous or vicious in human conduct; so that simply by inspection it can, without any aid from reason, pronounce upon any action a clear and certain judgment. It cannot pronounce a decision with certainty upon any action, unless it is placed fairly and fully before the mind, with a complete view of all the circumstances necessary to give a perfect shape to the action, and to form a sound judgment concerning it. The moral faculty, like reason, or like taste in the liberal arts, has its infancy, when it is yet feeble in its perceptions and liable to error in its decisions. And like them it requires strength by experience and reflection. But, surely, it would be as absurd to suppose, because the moral sense is liable to error, that, therefore, it was not intended to be any guide or censor of our actions, as it would be to conclude, because reason is not infallible in her conclusions, that she is no judge of truth. The end for which this faculty was implanted in our nature, was to become to us a light, guide and director in matters of duty. Reason can point out what is fit, what is safe, and what is useful, but to these ideas conscience adds the impression of duty, and gives them the authority and sanction of a law. It enjoins, it commands, it rewards, it punishes, it points to the justice and power of a supreme lawgiver and judge, of whose voice that of the judge in our own breasts is the faint, indeed, but commonly the sincere response.

From considering that moral law the creator hath imprinted on our nature, he proceeds to the subject of natural theology, which brings to view the most powerful sanction of that law, and renders it more clear by discovering the source from which it emanates. On this head, he enters into the proofs of the being of God which have usually been derived from two sources, the necessary nature of our ideas, and the structure of the universe. The one has been de-

nominated the scientific, the other the popular mode of proof, or, in the language of the schools, reasoning a priori and a posteriori. From the proofs of the existence of God he passes on to the review of his attributes, which are natural and moral. In the former are comprehended his spirituality, unity, eternity, omnipresence, power, and wisdom. Under the latter, his holiness, justice and goodness. When speaking of the goodness of the Supreme Being, he has some reflections which are so honourable to the moralist and divine, and are calculated to produce so happy an effect upon the mind, in reconciling us to the appointments and dispensations of heaven, that we cannot refrain from inserting them for the advantage of our readers.

"But why, it may be asked, should we be left to estimate our grade in the scale of being by the surplusage of happiness above pain? Or, why should pain exist at all in the system of a benevolent being? Satisfactorily to answer these, and a thousand other inquiries that might be instituted on this subject, would probably require a knowledge of the nature, and the infinite relations of the universe, which none but the Deity himself can possess. We can, therefore, expect only from revelation the information which we desire, as far as he is pleased to impart it. But while we are compelled to resort to the feeble lights of our own reason alone for a solution of the difficulties which spring out of the combinations of an infinite system, we must be contented with such probabilities only as it can yield us.* If, in the scale of existence, then, there

*"Rejoicing, however, that when we have explored reason to the utmost, we, as christians, still enjoy the superior illumination of the sacred scriptures, whence, if we cannot derive such lights as will satisfy every inquiry of an ambitious curiosity, we may, at least, draw competent satisfaction for a humble and rational piety; particularly with regard to this great question, why human nature exists in its present state of imperfection, requiring the corrections and discipline of the pains and sufferings which we see attached to it?"

be a place for such a being as man, with just such a measure of intellect, and sensibility, and with just such principles of action, continually requiring excitement and correction; and especially if it be conceived that he is placed in the present world, in a state of probation and discipline for a future period, and a higher condition of existence, a supposition which to philosophy is as probable as to religion it is certain, may not all the pains which enter into the moral culture of this life, be regarded as the discipline of a wise and gracious parent, and, therefore, as essential parts of a most benevolent system? Let us contemplate the relation which the pains necessarily incident to human nature, as it is now constituted, have to the improvement of its powers, and consequently to its happiness. The wants of man contribute to rouse that industry, and habitual exertion of all his faculties of body and of mind, on which their vigor and perfection principally depend. A paradise, where all his wants should be spontaneously supplied from the abundance of the soil, and all his senses gratified by its fragrance, its beauty and luxuriant sweets, would deteriorate the human character, and sink the noblest creature in the world into a lazy, torpid, and vicious animal. The happiness, no less than the improvement of our nature, lies chiefly in constant and useful employment, stimulated by these necessary wants. Enjoyment seldom yields pleasures equal to those which arise out of the activity requisite to procure it. The very efforts excited by pain and want, or by the apprehension of them, often produce a satisfaction, or diversion to the mind, which far overbalance their evils. Want whets ingenuity; danger and suffering call into operation the virtues of courage and fortitude, that communicate a character of grandeur and nobleness to the mind, which often raises it superior to the ills of life. And labour, however it might be the curse of man fallen from the perfection of a superior nature, is beyond a doubt the blessing of his present existence. Reflections of a similar nature might arise from an attentive consideration of every particular evil to which human life is exposed. And, in a moral point of view, how much more justly may we regard them as a

part of the benevolent discipline of our heavenly Father? They are correctors of the passions; they assist the habits of reflection; and often recall the mind from pursuits injurious to its virtue and its true interests.

"But, instead of examining in detail the various evils of life, and showing how the goodness of God is affected in permitting their existence, I shall select only a few; believing that if, in these, the benevolence of the divine administration can be justified even to our limited understanding, a hint may be suggested, or a clue given by which its vindication may be pursued in other cases. Take for examples, the circumstances attending the manner of our entrance into the world, and of our departure from it, which have been thought to involve serious objections against the benignity of the Creator. With regard to the former it may be fairly maintained, that the pains of bearing, nursing, and educating children, with the diseases and dangers of infancy, which seem, at first view, to be peculiar afflictions on the human race, will be found, on examining their connexions and all their relations, to be among the chief causes of the existence of society, and the felicity of social life. If children, like the young of other animals, were able to run as soon as born, and to feed themselves, with almost no dependence on the care of a parent, the powerful ties, and sweet endearments of parental affection, and of filial duty, would be unknown. The union and happiness of domestic society would be dissolved; and civil society, of which the domestic is the germ and the principal support, could not exist. Man would be a solitary and ferocious savage. The facility of rearing children, and their independence on a parent's care, would give the strongest encouragement to a vagrant and licentious concubinage, destructive of all the virtues, and of the dearest interests of human nature. Besides, the diseases of pregnancy, as human nature is now constituted, and the pains and dangers of child-birth, serve to endear the parents to each other, by the weakness, tenderness, and dependence of the mother; by the honour, generosity, and sympathy of the father; and a hundred fold to endear the child to the

parent. And it is an acknowledged principle in human nature, that the troubles and continual solicitudes of nursing and education, together with the necessary diseases and hazards of infancy, greatly augment the strength of parental attachment, and lay the most firm and lasting foundations of the unions, subordinations, and harmonious affections, first of domestic, and afterwards of civil society. In these pains, then, which have been selected as specious objections against the benignity of the divine administration of the government of this world, we find some of the principal sources of human happiness.

"As to the manner of terminating the present state of existence by death, the necessity of it arises out of the structure of our nature. Death is the only way of giving to successive generations the means of existence. If this part of the plan of divine providence must be changed, the whole order of life must necessarily be changed with it. There could be no such creature as man in the scale of being. The institution of the sexes must be destroyed —the multiplication of the race must cease. The modes of subsistence on the products of the earth, which can sustain only a definite number, must be done away; and with these, as the whole state of human life is connected together by a close unbroken chain, must cease the operations of agriculture, the interchanges of commerce, and the entire system of the present occupations and pursuits of men. Man himself would be the first to object to such a new order of things. If death, then, be a necessary part of the human economy, and to man himself it would be undesirable to change it, if it must be accompanied with so many other changes, still more unfriendly to the wishes and the comfort of mankind, the only question that remains, is, in what manner it may be best accomplished so as to attain the most useful ends of its institution? Even if the whole human existence were to be terminated by death, this last act of our being, so justly formidable to our frailty and imperfection, is but a momentary pang, which has been far overpaid by the pleasures of life; but if, as religion assures us, and philosophy renders probable, this life is only a

period of discipline and probation for another state of being, and death is the avenue through which we must pass to it, certainly no method of approaching that decisive crisis could be imagined more beneficial than that which exists of attaining every good moral end connected with it—of making the descent to the grave easy to the virtuous—of impressing a salutary but not oppressive fear on all, as a useful restraint from vice—of preserving the mind, by its extreme uncertainty, always vigilant and attentive to the discharge of every duty, which is the best preparation for a tranquil exit from life—and finally, of inducing it to hold its present pleasures in a continual state of obedient resignation to the will of God, in the hope of exchanging them for such as are higher and more perfect." p. 33—39. vol. 2d.

On the immortality of the human soul, which topic next engages the attention of our author, while he admits that the only certain evidence of its truth is to be derived from revelation, he gives an able and eloquent view of the arguments furnished by reason in its favour.

Having stated generally the principles of human nature, especially as related to our system of moral action, and exhibited, likewise, the most obvious evidences which reason presents to us of the being of God, and of the immortality of the soul, doctrines which give the greatest efficacy to the law of duty, he comes more particularly to the consideration of our duties themselves, the great end to which his preliminary discussions have prepared the way. The performance of duty from right principles and with right affections, is denominated virtue. In the speculations of philosophers on the subject of virtue, three very general and abstracted questions have been raised: what is its nature? what is its excellence? and what is its sanction? Of the nature of virtue different opinions, or perhaps different

modes of expressing the same opinion, have been adopted by various writers. Some maintain the principle, that virtue consists in acting agreeably to the will of God; of which sentiment Dr. Paley is a distinguished advocate. Others, with Dr. Campbell, insist, that it is only the wisest means of promoting our own happiness. Another class concur with Professor Hutcheson, in resolving virtue wholly into benevolence; making it consist in a prudent well-directed care to promote general good. And, finally, those who delight in a very abstracted and intellectual consideration of all subjects, define virtue agreeably to the opinion of Mr. Locke, to be acting according to the reason and nature of things. With regard to these opinions, he remarks, that there is a portion of truth in each of them; but as general definitions of virtue, they seem to be deficient in precision and accuracy. If that definition of virtue, which makes it consist in acting agreeably to the nature and reason of things, had been limited to our own nature, the mutual relation of its different principles to one another, and the relations of the whole to other sensible beings, he should be disposed to acquiesce in it. He adopts, therefore, the opinion of those ancient philosophers, who make virtue to consist in living according to nature; that is, according to the respective dignity and importance of the different principles which enter into the composition of our nature; according to the relations in which it is placed to other sensible beings within the sphere of its action; and, finally, according to the end for which it seems to have been formed.

And on this point, we owe it to truth, to candour, and the character of a reviewer, whose office we have assumed, to observe, that notwithstanding the ingenuity which the learned doctor has discovered in maintaining his opinion, and the learning and ability with which he has illustrated

and recommended it, we must be indulged in giving a decided preference to the opinion advocated by Dr. Paley, that virtue consists in acting conformably to the will of God, and we think we may add also to the definition, from a sense of duty to him. The opinion which makes virtue consist in acting agreeably to nature, cautiously guarded as it is by our author against every immoral tendency, is not only liable to the objection of a want of precision and perspicuity, but in its application to practice would be attended with infinite and inextricable difficulty and obscurity. Besides, we beg leave to remark, that the moral rectitude or pravity of actions depends entirely upon the motives which influence the mind to their performance. We have no idea of a truly virtuous action which is separated in the agent from the sense of duty to God, and in conformity to his will. We may with as much propriety predicate virtue of a piece of mechanism, all whose parts fulfil their appointed destinations, as of the man who performs an action, with due reference to all the constituent powers and faculties of his nature, detached from a consciousness of his obligations to fulfil a law, and of duty to a supreme lawgiver and judge. From an examination of the structure of our corporeal, moral and intellectual nature, we may, indeed, frequently trace intimations of the will of our Creator; but it will ever be found true, that the rectitude or turpitude of our conduct does not so much depend upon our acting with due regard to all the component principles of our constitution, according to any gradations of dignity and importance we may suppose them to occupy in our system, as from the sentiment of submission and obedience to God. We cannot help thinking, therefore, that the opinion which makes virtue to consist in acting conformably to the will of God, is more simple and precise as a rule of conduct, more favourable to good morals, more consistent with the system of

christian doctrine, as well as more consonant to the principles of a sound and just philosophy.

In regard to the remaining questions, in what does the excellence of virtue consist? and what are its sanctions? he very justly concludes the one to consist in the essential nature of the thing itself, and is, of consequence, intrinsic and eternal, and the others, to be religion, conscience, and general interest. He finishes this part of his subject by a brief view of the opinions of the epicureans, stoics, and peripatetics concerning the supreme good.

From this point he goes to the detail of our duties, on which he first descants, under those divisions made of them by the ancient philosophers, who classed them according to the principles from which they spring, under the heads of justice, prudence, temperance, and fortitude; and then, according to the division of christian writers, who arrange them in reference to the objects upon which they terminate, under the heads of the duties we owe to God, our fellow men, and ourselves. On each of these particulars, he delivers to his pupils many useful and profound lessons of practical wisdom, which should be carefully perused and dilgently studied by every ingenuous youth who is desirous of being instructed in the laws of his duty, and of imbuing his mind with the principles of virtue.

The next subject which attracts the attention of our author, is that of economics, which treats of the reciprocal obligations and duties which arise out of the relations of husband and wife, parent and child, master and servant. Of these relations, the first in importance, as well as in its natural order, is that of husband and wife; and omitting, as unnecessary, all other questions, he limits himself to laying down a few principles relative to the nature, end, and duration of the contract by which they are united.

Marriage is the union of the sexes under the sanction of known and public laws. According to the precepts of our religion and the civil institutions of the christian world, it can take place only between one man and one woman. In consequence of the laws of Israel upon this subject and the customs of patriarchal antiquity, it has become a question among christian moralists, whether polygamy be contrary to the prescription of the law of nature, or only to the positive institutions of religion and the state? In answer to this question, he allows that of the law of Christ there can hardly exist any doubt, but maintains that the law of nature has not prescribed any definite rule upon the subject, and, therefore, where religion has not taken it out of the hands of the legislator, it is to be regarded chiefly as an affair of civil and political regulation. And yet he admits that matters have been so adjusted by the creator, that, allowing for the waste occasioned by the more hazardous occupations of men, there is nearly an equality of numbers between the sexes, and thus, as it were, by the immediate appointment of the great contriver, one woman is in the order of nature allotted to one man; and moreover, that monogamic institutions have been found wherever they have prevailed, to be followed by a more favourable influence than the polygamic, on the improvement and happiness of society. And could we desire stronger indication than these of the existence of a law of nature in this matter, or could the creator in the system of things have communicated to us more explicit intimations of his will: I leave it to the candour and philosophical discernment of our author himself to decide, whether by such an adjustment of the system of nature, as that the numbers of the sexes shall be equal, and the monogamic institution more beneficial in its influence upon society than the polygamic, the creator has not virtually declared to us

his will, from the beginning, which, in process of time, he revealed in his holy word. He shows us evidently by this arrangement that it was his intention that one woman should be allotted to one man, and that, in this respect, as in every other, his holy word is in perfect harmony with his works, and the law of nature with the sacred law of the gospel: we think, therefore, that the very data furnished by our author on this subject, overturn his conclusion; nor would the opinion we advocate tend to throw the smallest reproach upon the venerable patriarchs of antiquity, who indulged in the practice of polygamy because it was permitted by the laws of that dispensation under which they lived, and not prohibited by any civil or religious regulation of their country. The Creator may in this, as in the matter of divorce of which our Saviour speaks, have granted them indulgence on account of the hardness of their hearts. Besides, we know that the laws of nature, both in the physical and moral world, are enveloped often in an obscurity through which the feeble ken of man cannot penetrate. Now, if the patriarchs had never been made acquainted with the law on this point, although it might be in existence, they could not be considered as culpable for its violation, but as soon as it was formally promulged by Christ, the plea of ignorance was annulled, and its transgressors became liable to the penalty annexed to its infringement.

On the duration of the marriage contract, and of divorce, he observes, that the evident interests of society and humanity require that the union of husband and wife should be permanent during the life of both. The laws of marriage ought to be especially calculated to protect the weakness of the female sex, and to save from outrage the delicacy of their attachments. To this end, no principle, perhaps, is better adapted than the perpetuity of the marriage contract.

The only causes which can, in his opinion, consistently with virtue and good morals, dissolve this contract, and divorce the parties from each other, after it has been legally formed, are, infidelity to the marriage vow by the dereliction of chastity; obstinate and continued desertion; habitual intoxication; cruel and barbarous treatment on the part of the husband. Other causes have been assigned by different writers, which in his judgment do not afford sufficient ground of divorce, such as contrariety of temper, certain diseases supposed to be incurable, and mutual consent. On this subject we think our author has treated with more than his usual felicity of matter and manner. What he has said in the conclusion of this chapter, is so eloquently expressed and exquisitely touched, and is also calculated to produce so excellent an effect upon the minds of young persons, that we beg leave to transcribe it in his own words:

"Having spoken of the marriage contract, formed under the sanctions of the civil law, and considered it, as limited by the christian law, to take place between one person only of each sex, I shall now proceed to point out the crime of any clandestine and illegal unions which form the principal offence against this most important of the domestic relations. In proportion as loose and vagrant connexions between the sexes exist, and are justified, or connived at by public opinion, or are pursued by private vice, marriage is regarded as inconvenient, and falls into disuse; men become profligate and enervated; women are rendered unhappy and contemptible in proportion as they are dishonoured; and children, growing up without proper example and education, become ignorant and vicious; and, from all these causes, the public morals and the interests of the state suffer deep and irretrievable injury. There is no vice which men appear to be so willing to excuse to themselves; yet none, in the whole catalogue of crimes, is productive of greater evils to society. The licentious, because

they do not immediately suffer from the consequences of their seductions, are found to become unfeeling, cruel, and treacherous. Remorselessly they leave the victims of their pleasure to the most exquisite sufferings, to infamy and ruin. If these unfortunate women ever return to a sense of virtue, they are overwhelmed with anguish and shame: but if, as is too likely to be the case, a vicious appetite, or despair from the loss of character, tempt them to a life of prostitution, a fatal gulph is prepared for the public morals. But who can estimate the cruel injuries done to an unacknowledged and abandoned offspring, whom the guilty father had no right, for his own pleasure, to bring into existence, in order barbarously to give them up to want, disgrace, and vice! If violations of property are punished with imprisonment and death what pains can be too severe for violations of chastity which draw after them a train of so much more aggravated evils! It diminishes the guilt but little, that they are, most commonly, committed with the consent of the unhappy sufferer; it is the difference only between swindling and robbery.

"Women, whose frailty deserve compassion, have usually been the sole or the principal sufferers from this crime, by the natural dangers which grow out of the female constitution, by the severity of public opinion, and their own terrible sensations when left alone to all the consequences of their lost virtue. If the law would ever impose an effectual restraint upon an evil so pernicious to society, it must subject the aggressor sex, who are chiefly culpable, to some pains equivalent to those of which they become the occasion to their seduced and unhappy companions.

"Men who would reprobate in the strongest manner the arts of seduction employed on tender and inexperienced females in the wealthier and more polished circles of life, too often feel little compunction at corrupting the virtue, and destroying the happiness of women in the inferior classes of society. The pride of rank and fortune disqualifies them from sympathizing with the feelings of those who are far beneath them, as if their sensbilities were less exquisite, and the loss of character were to them a less

evil than to females of better condition. Their inferiority, indeed, renders them more liable to the unprincipled attempts of seduction; but the loss of virtue and of character is not less a source of extreme wretchedness, and often becomes the direful impulsion to abandoned prostitution, and, at length, to the perpetration of the deepest crimes. When women, in order to guard one virtue, the most difficult and important to be preserved, have collected the whole of female honour into a single point, that it may be the more strenuously defended, if they have been seduced to deliver up this fortress of their fame and character, they commonly abandon with it all their other virtues. And the seducer, who, by vows and protestations, has betrayed too credulous innocence, is chargeable, in the sight of heaven, with all the anguish and the guilt which follow. What, then, must be the degree of that anguish which follows the fruit of unlawful love, when woman, whose maternal feelings are so exquisite, who would survey with such pride the infant which she could honourably own, who would bend over it with such extacy, who would rush into the midst of flames to rescue it from danger, but, unlawfully become a mother, is often tempted to stifle all the feelings of nature, and, in a moment of distraction, to remove it forever from her sight, or herself to become its murderer, to hide her own disgrace! If the deep affliction of a deluded sufferer, if the loss of so many pleasures, and so many hopes, as accompany the innocence of a virtuous woman, if the vices, the shame and misery which follow the dereliction of virtue in the sex, can aggravate guilt, how aggravated must be the guilt of her seducer! And how base must be the heart of that man who, for a moment of thoughtless pleasure, will hazard the bringing of such evils upon one whom love should cherish, whom honour and generosity should protect!

"There are men whose honour would shrink from the enormity of bringing disgrace and ruin on the innocence, and the confiding simplicity of a young woman in a decent station of life, who are little scrupulous at seducing married chastity. They encourage themselves by the idea that this crime is more secure from the dis-

grace of detection, and the foul dishonours which blast the fruits of unlawful love in an unmarried state. Yes, but it is never perfectly secure. And is it not then greatly aggravated by the dishonour and affliction of a whole family, and by the anguish of a husband robbed at once of his honour, and his principal treasure? No reward can purchase back the peace of mind of an injured husband, and father of a family. Death would often be a preferable evil. But, admitting that the crime could be preserved a perfect secret, is it, in any degree, less a crime on that account? The criminality of an action is not to be estimated by the consequences which may happen to an individual in a particular case, but by those which would flow from admitting the principle of such actions as a rule of general conduct. For no individual has a right to have peculiar rules of duty, or peculiar exemptions from general rules established in favour of his passions. What, then, would be the effect of this moral principle, that secresy, while it protected, also justified an adulterous commerce? To what jealousies, suspicions, distrusts, infelicities, would it not give rise? No ties of *duty*, then, would prevent the rising of a new passion in the breast of a married woman. All domestic confidence, all the harmony of society would be destroyed.

"The seduction of virgin or of married chastity, considered in the lights in which they have been placed, will generally be condemned by the reason of all men; there are not a few, however, who justify, or excuse illegal connexions with those who have already lost their virtue, or are prepared to make a mercenary sale of it. Although this may appear, to careless observers, to be less culpable than the cases which have been just mentioned, it is, nevertheless, a crime highly pernicious to the public interest, and destructive of the moral habits of the people. And a great portion of the species it necessarily renders most worthless and most miserable. Society is deeply injured by a practice which effeminates and debauches the manners of its citizens, and especially which discourages marriage, and prevents the forming of regular and orderly families, which are the strength of a state, and the principal

source of its prosperity. And certainly no vice more entirely depraves the mind than this low commerce of gross sensuality. It blunts the fine and delicate perceptions of the moral sense; and, perhaps, the greatest crimes which ever disgraced human nature have taken birth amidst the scenes of loose and profligate pleasure.

"Having pointed out the criminality of any union of the sexes not authorized by the laws, under whatever form it may take place, I conclude with a brief answer to this important moral inquiry, how far does reason, and a just regard to chastity require that men should impose a restraint upon their conduct and their passions? The rule of the gospel is most conformable to the dictates of a sound reason, that the guards of virtue ought to be placed upon the heart and the thoughts. It is of the utmost importance to preserve the imagination and the fancy chaste; it is otherwise in vain to hope to subject the manners to the laws of modesty and virtue—a loose wit, indelicate conversation, lascivious pictures, odes, scenes which tend to inflame the passions, the visions of a sensual fancy indulged, are culpable in the next degree to actual prostitution. The law of God requires that our thoughts shall not sin; and the law of reason confirms its dictate." p.135--141.

From considering the institution of marriage, he next ascertains the duties of parents to their children; viz. present maintenance, education and provision for the future comfort of life; and of children to their parents, of masters to servants, and of servants to masters. He speaks with so much eloquence and pathos on the subject of slavery, that we beg leave to transcribe a few paragraphs for the benefit of our countrymen:

"Still more iniquitous is that barbarous policy which excites wars among the ignorant and savage tribes of Africa, with the view of purchasing for slaves the wretched captives. Indeed, the

whole of the African trade for slaves, in its principles, in its conduct, in the miseries it has introduced into an extensive region already too miserable; and in the cruel mode in which these unhappy wretches, after being torn from their country, are pinioned down in the holds of the vessels which convey them to the remotest parts of the earth, to be sold like brutes to perpetual bondage, is among the most atrocious inroads upon justice and humanity which have ever been practised in any age, or by any nation. The pretences which are made to justify it are as impudent as the traffick is inhuman—that a civilized people have a right to compel such ignorant savages to labour for their convenience and pleasure*—that a people possessing the knowledge of the true religion, may lawfully seize such gross and stupid idolaters, and transport them to a country where they may be better instructed;† when, God knows, even this hypocritical pretence never entered into the views either of the slave-merchant or the purchaser. But a more plausible palliative for the practice is the idea that many of these unhappy men were slaves in their native country; and that all must have been more miserable at home, half famished amidst their burning and barren sands, and subjected to a dark and bloody despotism, than they can be in a mild and plentiful region, among a people of polished manners. This is making the prejudices of our self-love the judge of their happiness, while at the same time, our own interest is the advocate. There is no country, however severe the climate, and however barren the soil, from which a native is not unhappy to be exiled. The ideas, the habits, the pleasures of men, are all inseparably blended with the

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"* Such were the imperfect ideas of morality which prevailed among the most enlightened nations of antiquity, that Aristotle maintained that *a civilized people has a natural right to make war upon barbarians*, and, consequently, to reduce them to slavery."

"† This was a principle of the Romish Church in the grossest ages of her superstition; and on the pretence of this detestable principle, the Spaniards exterminated, or reduced to the most abject condition of servitude, the miserable natives of Mexico and Peru."

scenes, with the society, with all the objects which have been familiarized to them in the country which gave them birth. A Laplander prefers his snows and rocks to the most cultivated landscapes of France or England. An American savage perceives more delight in his solitary wilds, and even in the ashes of his wigwam, than he would in the most splendid apartments of a palace. Men deceive themselves continually by false pretences in order to justify the slavery which is convenient for them." p. 166—168.

And in another part of his argument on this point he says,

"The cruel and mercenary policy of those commercial nations in Europe who planted colonies in the new world, gave birth to that trade in African slaves, which, on the score of its injustice and inhumanity, merits the strongest reprobation. Hence the origin of that extensive system of slavery which exists in several of the United States. But here our inquiries must receive a new direction. Is that slavery which was unjust in its origin, equally unjust in its continuance? All men condemn the barbarity of dragging the simple Africans from their native country. But America is the country of their descendants, and it would now be equally cruel to tear them from the soil in which they have grown up, and to send them back to Africa.* Servitude is undoubtedly a hard lot to the sensibilities of freemen; but the habits and ideas of these people being accommodated to it from their infancy, it does not press with the same severity upon their feelings. And hard as their lot appears to be, it cannot be denied to be preferable in every thing, except the sense of liberty, to what it would have been, born of the same parents in the original country of their

*"And their general and indiscriminate emancipation, as we shall show in the progress of the lecture, would be attended with many and almost insuperable difficulties."

race. But that precious sense of liberty renders tolerable to the savage poverty and wretchedness, the most barren sands, and the most howling wilderness. To confer on our American slaves, therefore, a privilege so dear to human nature; and otherwise, as far as possible, to ameliorate their condition, are certainly objects worthy a humane legislation. But our generous feelings may sometimes rush too precipitately to their end, as well as worse passions. And, in accomplishing this benevolent work, if it can be accomplished at all, in those states into the constitution and manners of which slavery is most deeply incorporated, great precaution must be used not to render their emancipation a worse evil than their servitude. But, in the first place, private justice on the one hand, and, on the other, that natural selfishness which infallibly regulates the councils and decisions of the great bodies and communities of mankind,* will oppose insuperable difficulties to its execution. The citizens of those states hold a property in slaves to a very large amount, acquired under the sanction of the laws. The laws, therefore, could not equitably compel them to make a sacrifice of so great value, to the convenience and comfort of any class of men. And neither justice nor humanity requires that the master, who has become the innocent possessor of that property, should impoverish himself for the benefit of his slave. On the ground of compassion for this degraded race, I do not know that the present holders are exclusively called upon to suffer the loss which must be incurred by a general emancipation. One mode, indeed, has been suggested, in which it is conceived that the demands of justice on the part of the master, may be reconciled with the wishes of benevolence with regard to the slave; and that is, by making an equitable estimate of the value of each slave, and of the value of his labour for a year, in consequence of which, the

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*"Individuals may frequently be found who are capable of rising above every selfish consideration. This is seldom the case of men acting together in a mass. Therefore we so often see the hardest and most cruel things done by such bodies without any compunction."

state might bind these slaves to their present masters, as in other cases of bound servants, for a term of years, to be calculated from the preceding estimates; after which they would naturally pass to the enjoyment of liberty. To this might be added a law declaring all who should be born in a servile condition after the passing of that act, free after a certain age; only allowing sufficient time by their labour to recompense their masters for the expense of their maintenance through childhood. All that could be said of such a law would be, that it would be less unjust than one proclaiming an immediate and universal emancipation. What free people would allow their legislators to dispose, in the same manner, of any other portion of their property? But if it were free from every objection on that head, great and numerous difficulties would oppose themselves to its execution: difficulties which will not readily suggest themselves, perhaps can hardly be conceived by men who have not, at some time, been familiar with the institutions of slavery, and witnessed their effects on the habits, ideas, and whole state of society. One difficulty only I will mention, which a prudent policy, always attentive to the public safety and tranquillity, will naturally oppose to such a general manumission as is here contemplated. No event can be more dangerous to a community than the sudden introduction into it of vast multitudes of persons, free in their condition, but without property, and possessing only the habits and vices of slavery. Theft, plunder, and violence, would become common modes of supplying their wants among a people who had been used to labour only through compulsion, and whose servile principles would take off the shame of the basest actions. Delivered from their former restraints, they would become idle and profligate. Few of them willing to labour, and fewer finding regular and constant employment, or receiving wages sufficient to support them and their children;* they would often seek their provision by plunder, and

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*"This would necessarily be the case, as long as slavery still subsisted; the free would seldom be employed while the master could be served by his slaves."

often by corrupting the fidelity of the slaves. In the natural progress of events, therefore, we should soon see property every where invaded, public safety disturbed, and even domestic peace and security constantly endangered." p. 169—173.

He concludes the subject with the following solemn admonition to the holders of slaves in our country:

"There is another view in which good policy requires that those states, in which the number of slaves greatly exceeds the free population, should adopt measures to diminish that disproportioned excrescence so dangerous to the political body. The time must come when these slaves will feel their force; and there will not be wanting among them men of a daring and enterprising genius to rouse it into action, to the great hazard of the public safety. Every revolt, and even every appearance of an insurgent and seditious spirit among the slaves, must subject them to new severities; and severity will multiply revolts. Slavery is preparing at some future period, much individual misery, and frequent and dangerous convulsions for the republic. It is a volcano which sleeps for a time only to burst at last upon the unsuspecting tranquillity of the country with a more terrible destruction.*

"O masters! treat your slaves, while slavery is suffered to exist, with all the mildness of which the necessary state of servitude admits; attach them to you by love; imbue their minds in earliest youth with the principles of good morals; admit freely to instruct them those teachers of religion, of whatever denomination, who will take pains to adopt religious ideas to their measure of understanding, and impress them on their hearts. The more of religious principle and feeling can be introduced among them, the greater security will you have for your own safety, and the safety of the republic." p. 178—179.

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*The servile war at Rome was one of the most dangerous which ever agitated that republic; and we have lately seen with horror the convulsions of St. Domingo.

After taking a survey of the constituent principles of human nature, of the general heads of morals, of natural theology, and œconomics, he arrives at the last grand division of his work, which he denominates with others, his political philosophy or the philosophy of legislation. Political philosophy is naturally divided into three parts, consisting, first, of the rules which regulate the conduct of men toward one another in a state of society, and the means of enforcing those rules.

Secondly, the principles which give the form to the society itself and which direct its operations. And lastly, the rules which should govern the conduct of independent societies, or states towards one another. The first compose the science of jurisprudence, the second, that of politics, and the third, that of public law or the law of nature and nations.

Jurisprudence consists of two parts, of which the first ascertains and defines the rights of men; the second relates to the legal and authorized means of defending those rights. Rights are divided in different ways, according to their degree, their objects, or their sources. In the first view they are perfect or imperfect, alienable or unalienable; in the second, they are personal or real, and in the third, natural or adventitious. We have already extended our review of this work to such a length, that it is indispensably necessary that we pass more rapidly over the remainder. The second part of jurisprudence relates to the means of defending those rights which nature or the laws of society have bestowed on the citizen. They consist in preventing, in repelling, or in repairing wrongs. Of preventing crimes he speaks thus:

"For promoting the tranquillity, order, and happiness of society, no provision can be more effectual than imparting the means of

instruction to every class of the people, particularly with regard to their moral, and social duties, and the method of transacting all their ordinary affairs with promptness and intelligence. That degree of knowledge which, in a free country, may be imparted, by a prudent legislation, to the poorest orders of the citizens, contributes to exalt the moral feeling of the public, and heightens the love of order, and abhorrence of crimes. And by an honourable provision for cultivating the higher branches of science, there will always be prepared a most useful class capable of directing with wisdom and prudence the operations of government. And although they should never be called to bear an immediate part in the active labours of legislation, or the administration of the laws, they will serve as so many fountains of light distributed through society, to shed the irradiations of moral and political truth among the people, and with them, the love of virtue and of order. The rays, it is true, may often strike feebly upon dull and uninstructed minds, yet will they diffuse a general twilight, which is infinitely more friendly to public virtue, and social happiness, than the gross manners, and rude and untamed passions which generally accompany national ignorance, and the total destitution of science.

"Another, and important mean, for the prevention of crimes in a community, consists in the protection and encouragement given to religion. Religious knowledge tends to civilize the mind, and religious fear often holds a powerful controul over the violent passions of the most vicious of mankind. To the influence of religion have all wise legislators in antiquity resorted, to lay the foundations of society most securely, and to promote its civilization. The rites with which the people continually approached its altars, impressed the public mind with a salutary reverence for those divine powers which were believed to preside over the world, and were the avengers of crimes. The christian religion adds principle to ceremony, and instruction to the rites of devotion, and seizes on the soul by the double power of religious illumination and religious awe. As we possess, however, a public and generally acknowledged code of religious doctrine, which every man is

able to interpret for himself, it is, perhaps, not desirable that any peculiar exposition of it should be prescribed by the authority of the civil government. Every citizen should be permitted to use, and sacredly protected in using, his own right of opinion, and in the privilege of associating with any others of corresponding sentiments, for offering their common devotions to the Deity. A sentiment of religion is deeply implanted in human nature; and it is justly to be expected that each man will be as solicitous to preserve the privilege of expressing it according to his own understanding, or the dictates of his own heart, as the government can be to enjoin it. By trusting to individual feeling and opinion, there can be no danger that religion, so necessary to the existence, so useful to the ultimate improvement of civil society, should perish. The variety of sects will even be useful by their mutual emulation, to preserve alive that pious zeal and that vigilant moral discipline over their internal manners, which will, in the best manner, aid the public virtue in the great mass of society. With the temporary follies of enthusiasm which will sometimes spring up amidst an unenlightened populace, the government has no concern. They turn the mind to religious reflection, and, if not intemperately opposed, they always subside, in time, into some more sober and useful form of religion connected with regular morals. The encouragement, therefore, which good policy requires the civil government to extend to this subject, is to protect every man in the sacred rights of religious opinion, and every denomination in the forms of its own worship, and its internal discipline over its own members. In this liberal indulgence to all sects, the state requires no other guard for its tranquillity, against any tumultuary efforts of enthusiasm, than effectual prevention of individual zeal from restraining, or interfering with the civil privileges of their fellow-citizens." p. 225—228.

Under the head of repelling and repairing wrongs, or on that branch of jurisprudence which respects the defence of the rights of the citizen, he calls the attention to the con-

stitution of the tribunals for the administration of the laws; to the principles by which those tribunals should govern themselves in pronouncing their decrees; to the evidence of crimes; the design, the proportion, and the nature of punishments.

The first maxim in the constitution of the tribunals is, that the judiciary power should be separated in its exercise from the executive and legislative, as far as the necessary union and harmony of movement in all the departments of government will permit.

Another principle of the highest importance in the constitution of the civil tribunals of a free state, is, that not only should the actual exercise of the judicial functions be distinct from those of the executive and legislative, but that all temptation to an undue subserviency to the one or the other may be removed from the judges, provision should be made in the constitution, as far as possible, for their complete independence upon both.

To render the independence of the judiciary complete, it is requisite that their stipendiary provision be as independent and permanent as their official existence.

Another political maxim which has been established by experience, as well as by reason, is, that in a free government the members which compose the supreme judiciary body of the state ought not to consist of a large number.

The purity of the administration of justice, in the next place, is greatly assisted by the publicity of all proceedings in its courts.

The next consideration in the constitution of the tribunals, that should engage our attention, is the means of uniting, as far as is practicable to human imperfection, a perfect knowledge and interpretation of the law, with the most fair and impartial application of it to each case as it may be varied by its attending facts and circumstances.

Finally, to render the constitution of the court and the defence of the people's rights complete, it is an important privilege which should be permitted to every party, to employ as counsel in maintaining their cause, and explaining for them all the laws which have any bearing upon it, the assistance of men who have by time and study made themselves thoroughly acquainted with these voluminous guards of the public liberty.

On the subject of those general principles by which the tribunals ought to be governed in pronouncing their decrees, he has some striking observations, which we trust may be of advantage to our fellow citizens who entertain those narrow prejudices which it is his purpose to remove:

"It is an inquiry frequently made, even by the judicious part of society, whence this rigid adherence to precedents? It is necessary equally, for the stability of the law, and the tranquillity of the citizens. It is absolutely requisite, in a free country, that the discretion of judges be restricted by positive rules which no impulses of favour, or opposition, shall dare to violate, or bend to the purposes of private passion. And no less necessary is it for the general peace, order, and contentment of the country, that each member of the community should, in every event, certainly expect the same decision in his own case which has ever been rendered to others in similar circumstances. By a judicious adherence to precedents, while justice is rendered to the parties, in the individual question before the judges, an important check is imposed on imprudent litigation, arising out of the same, or like subjects of controversy, in all time to come. As long as any uncertainty exists with regard to the issue of controverted questions of right, or property, the self love, and pride of mankind will be ready to disturb the quiet of society by their unfair, or malignant suits at law. This litigious spirit is in train to be repressed, by every decision which contributes to fix immutably a new point in the law.

"It seems, to many persons, strange and unaccountable, that, since the moral duties of mankind are few and simple, and the whole theory of justice and morality may be embraced in a volume, small, and intelligible to the most ordinary understanding, the laws of almost all nations should, notwithstanding, be extended into such ample volumes, and the administration of justice be esteemed such a difficult science, and be, in fact, such a tedious labour. And it has been erroneously conceived, by some immature politicians, that the work of legislation has been artfully magnified, and the whole structure and process of our courts of justice have been artificially complicated and entangled for the benefit of a particular order of men. They have, accordingly, entertained many crude projects in their fancies, for simplifying our civil codes, and reforming the whole order of our judicial systems. That some amendments, if wisely attempted, might be introduced into both, is probable. But in the rage for simplifying, there is great danger that justice would be rendered more uncertain, and the settled order of society, and the tenure of property would, in time, be miserably disturbed. Besides, the true ground of objection to the multiplicity of our laws, and the tedious process of our civil courts, is mistaken. It is not denied, that the knowledge of the moral duties of men in a state of nature, or of civil society, is a very simple science; and its details are reducible within a small compass. When the actions and intentions of men are distinctly known and fairly stated, a fact which is always supposed in every theory of morals, then the conclusion, that is, the grounds of approbation or condemnation, is plain, explicit, and definite. But it is impossible to apply the same simple process in the administration of the laws of the land. Here the fact, that is, the action which is in question before a civil tribunal, is hardly ever distinctly known till sought out by a long process of inquiry, and frequently by a detail of inferences drawn from imperfect circumstances, from dubious and contending evidence, and elicited from contrasted probabilities, which must exercise the ingenuity of the bar, the judgment and candour of the bench; whence it arises, that the decisions

of justice cannot always be clearly and immediately pronounced. The laws of the land, necessarily aiming to reach all the oblique and equivocal actions of men, often obliged to bring to light those which are most occult, and, amidst the innumerable disguises of human conduct, and intention, to search out the true mind and purpose of the action, must employ, for these ends, a vast multiplicity of provisions, which must consequently lay open an immense field of litigation. But after the *fact*, in consequence of these previous investigations, stands manifest in its full and perfect shape, the application of the principles of justice are not more obscure and uncertain than are the plain rules of morality in our domestic and social relations. The theory of morals, when the fact on one side, and the rule on the other, are distinctly presented to view, offers simple and obvious conclusions; the difficulty and uncertainty of the practical application of the rules of justice in civil tribunals arise from the involution and complication of human actions, under the studied arts of disguise." p. 252—255.

After concluding the subject of jurisprudence by considering the evidence of crimes, the design of punishments, their proportion, their nature and end, he proceeds to the subject of politics.

Under this head he treats of the different forms of government and the springs of their action, of laws relative to a monarchy, to an aristocracy, to a democracy, &c.; and then concludes his system of philosophy by giving us a brief sketch of the laws of nature and nations, as they have been laid down by the various writers on that interesting subject. But lest we should exhaust the patience of our readers by dry details of those points which he has filled up with so much interesting matter, and enriched with such various erudition, we must refer them to the work itself for further information. And to the attentive perusal of this work we beg leave, in conclusion, to recommend our fellow citizens

and more especially our young men. To our colleges it will be an inestimable acquisition. We know of no work upon the subject which comprizes so much learning and wisdom in such a small compass. The author discovers himself possessed of an understanding replenished with all the treasures of science, and he pours them forth to his pupils in a pure, correct, and flowing style. On whatever part of his subject he turns his attention, he looks with the eye of a philosopher, and faithfully catches the lineaments of truth and nature. We think him decidedly one of the ablest writers our country has produced, and that his works are among the few that have issued from our press, which will be read with interest by posterity. Happy were the pupils who had such an instructor! and fortunate the institution of learning which enjoyed the illumination of such an intellect to preside over its interests!

ART. II. ANNUAL ADDRESS, *delivered by appointment, before the Society for the Promotion of Useful Arts, at the Capitol in the city of Albany, on the 3d of February,* 1813. *By* THEODRIC ROMEYN BECK, M. D. *Fellow of the College of Physicians and Surgeons (New-York) and one of the Counsellors of the Society for the Promotion of Useful Arts.* Albany. Websters & Skinner. 8vo. pp. 44. 1813.

A SOCIETY for the promotion of agriculture, arts, and manufactures, was organized in New-York in 1791, and in 1793 an act of incorporation was granted in its behalf by the legislature of this state. Immediately after their formation the society offered to the public the first part of their Transactions; in 1794 a second part appeared; in 1798 they

published their third part, and in the subsequent year a fourth. The copies of their transactions thus published having been extensively circulated and become scarce, a new edition of the whole was printed in one volume 8vo. in 1800.

In 1804, the time of the charter for the society having expired, by the limitation contained in the act of incorporation, another act of the legislature was obtained, renewing its corporate powers, under the name of the *Society for the Promotion of Useful Arts.* This body, thus reorganized, favoured the public with a volume in 1807. That these several productions of the society have largely contributed to the promotion of the important objects for which they were intended, will readily be admitted; their publication having preceded the commencement of our labours, we with propriety forbear from offering any particular observations on their respective merits, and shall confine our remarks to the address now before us, the next in order, and, it is believed, the only one of the performances of the society that has been made public beside those just enumerated.

Little, comparatively speaking, has been our progress in the investigation of the mineralogical resources of America. Mineralogy, as a science, has but lately been introduced among us; and small indeed is the number of its cultivators. Our information concerning the mineral riches of this country is consequently neither extensive nor accurate. That little, however, that is known, it is the object of the present address to collect into one view, and to offer to the reader; and no one, we believe, who duly estimates the great importance of the subject on which it treats, and is desirous of its advancement, can peruse this publication of Dr. Beck insensible of his obligations to the author for his well directed and successful labours.

The account here given by Dr. Beck of the fossils of the United States, with their various application to the arts and manufactures, is the first of the kind that has been attempted, and is alike distinguished for its conciseness and perspicuity. On a subject so novel among us, much time and labour must have been expended in collecting the information which he has brought together, and every page bears evidence of the extent of his researches. On the effects which a knowledge of our native resources may have in promoting the establishment of domestic manufactories, and what influence they may ultimately have upon the morals and happiness of the people, Dr. Beck forbears to enter. "It is more properly," says he, "the province of the politician." The qualifications and pursuits of the politician may, perhaps, enable him in some respects to discuss, with an advantage denied to others, a question of this kind; yet, on a subject so important to the interests of our country, which comes home to the feelings of every member of the community, and with the powerful example of the old world before us, every man must have reflected and have formed an opinion, and the opinion of the majority, we believe, will be found to agree in that expressed by Dr. Beck.

"I may however observe," says Dr. B. "that those establishments which spring up spontaneously, without the aid of imposts, and heavy duties on foreign materials, ought to be encouraged, and indeed must unavoidably flourish. It cannot however be the wish of any true patriot, that the United States should become, in the strict sense of the word, a manufacturing country. The disease, vice, and diversified forms of misery, that exist in those parts of England, from whence our hardware and cloths are obtained, are sufficient to make the most sanguine advocate for the encouragement of manufactures tremble. After all that has been written and said on the subject, together with the notice that our national

legislature are giving to it, the wants of the country are the true data, which must guide to a decision on this subject."

It is unnecessary to enlarge upon the merits of the pamphlet before us; we have seldom seen so much valuable information comprised in so few pages. In order to diffuse this information as far as lies in our power, we shall avail ourselves of copious extracts, confident that they will be read with interest.

On the subject of iron we insert the following:

"The existence of iron in the present United States appears to have been known at a very early period to the colonists. In the year 1620, the company to whom the province of Virginia had been granted, sent out 150 persons to erect three iron works.* The success of this attempt is not stated. In 1645, permission to make iron was granted by the legislature of Massachusetts, and in consequence works were erected in several towns.† Nearly a century afterwards (in 1731) there were in New-England 6 furnaces for hollow ware and 19 forges.‡ In 1715, pig and bar iron were first made in Virginia, and the flourishing state of the manufactories of this metal in the colonies may be inferred from the fact of the British parliament in 1719 enacting several restrictive clauses unfavourable to these works.§ Since the revolution, new mines have been continually discovered, and in general worked to great advantage. At present there is scarcely a state in which iron is not found. From actual enumeration it appears that in 1810, the furnaces, forges, and bloomeries in the United States amounted to 530, of which this state furnished 69.‖ If they have increased

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* Holmes' American Annals, vol. 1. p. 205.

† Ibid. vol. 1. p. 335.

‡ Ibid. vol. 2. p. 139.

§ Oddy's European Commerce, vol. 2. p. 286.

‖ Mitchill's view of the manufactures in the United States, in the American Med. and Philos. Register, vol. 2. p. 413.

with the same rapidity in other states as they have in ours, their number at this time cannot be much short of six hundred. The value of the iron and its manufactories annually made in the United States, is estimated by Mr. Gallatin at from 12 to 15 millions of dollars,* whilst the imported metal, in its forms of bar iron, steel, &c. is supposed to average near four millions. This statement is highly encouraging even if it be compared with the English iron trade. Abounding in mines of excellent ore, and in facilities for working them, it is still found that for seven years (from 1797 to 1803) England annually imported about 43,000 tons of iron.† The value, indeed, of her manufactories consist principally in labour. The exquisite state of workmanship to which the various forms of iron are brought, and the extent of her commerce, places it among the most productive branches of national industry. The metal which is used in Great Britain in the process of steel making, is procured from the district of Roslager in Sweden.‡ It is obtained from the ore called *magnetic iron stone*, which is so pure as to yield from 80 to 90 per cent. of iron. In due process of time, the nation which furnishes this rich material, is obliged to become a purchaser of the finished goods. These facts deserve the attention of the enterprising in this country. Sweden is much indebted for the high character which her staple commodity holds in foreign markets, to the care that is bestowed in its preparation. The crown, as well as the proprietors of iron works, interest themselves in preserving its reputation.§ A subject so intimately connected with domestic improvements, certainly deserves the fostering care of government.

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*Gallatin's report on the state of American manufactures in 1810. The manufactures of iron in the state of Pennsylvania amounted in that year to the value of 5,869,487 dollars. (Mease's Picture of Philadelphia, p. 80)

†Oddy's European Commerce, vol. 2. p. 290.

‡Jameson's Mineralogy, vol. 2. p. 273. Chaptal calls it Rosalgia.

§Jameson's Mineralogy, vol. 2. p. 271. The various regulations adopted by the crown and the iron masters, are noticed by Oddy, and also in Porter's travels in Sweden. Vide Pinkerton's Collection of Voyages and Travels, vol. 6th.

"The ores of iron which are found in this country, are for the most parts, *magnetic iron stone, brown hæmatite, and bog iron ore.** The *sparry iron stone* has also been discovered and used. These different kinds are among the most valuable species of the mineral. They all yield an abundant per centage of ore, so as in most cases to bring a handsome profit to the proprietors. Several local circumstances conduce to this end. The cheapness of charcoal, the almost inexhaustible supply that our forests promise, the beds of coal that are continually discovering, are all arguments in favour of our nurturing this domestic manufacture. The only deficiency appears to originate from the want of workmen who are sufficiently intelligent, or acquainted with modern improvements. The consequence is, that the iron has not been properly prepared, and holds in our markets a comparatively small value, on account of its inferior quality.† A short period of time will doubtless remedy this defect. Men of capital and information are taking these establishments into their hands, and will press into their service American ingenuity and talents, together with all the aid that emigration affords.

"Although foreign iron (particularly Russia and Swedes) has in general the superiority of character in our markets, yet there are some instances in which American ranks higher than either; this is particularly the case with that manufactured at the *Ancram iron works* in this state. It is said to be superior to any now in use for iron wire, chains, &c. since it combines malleability and strength in a remarkable degree. This kind of iron sells at a higher price than either of the above.

"An enumeration of what has been effected in this branch of manufactures, will evince our rapid improvement, as well as mark what is yet to be done. Our domestic resources at this time sup-

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* In noticing various minerals, I have adopted the names, and in general the arrangement, used by Jameson in his system of oryctognosie.

† This fact is noticed by Mr Gallatin in his report. Vide also Col. Gibb's notice of the Vergennes' iron works in Bruce's Min. Journal, No. 2. p. 81.

ply us with almost every article that is needed in agricultural labours. Should it be found impracticable at any period to procure iron from foreign countries, the present works would doubtless be fully competent to meet the demand. The various implements which are necessary in husbandry, and the thousand uses to which different forms of this metal are applied on farms, together with those needed for domestic and culinary purposes, employ much of the active industry of our citizens. Various mechanical occupations also consume a large quantity of iron. Ship building is an art in which a vast amount is used. The contrast between our situation half a century ago, and our commercial greatness some years since, "when our thousand sails whitened every sea, and visited every shore," is a proud proof of our advancement in naval architecture.* In some instances our progress is still more striking. Gen. Hamilton, in his masterly report on manufactures, states, that in the year 1790, there were imported into the United States 1,800,000 pounds of nails.† In 1810, (though we still imported this article in considerable quantity,) there were manufactured in this state alone, nails to nearly the same amount. The making of cut nails is claimed as an American invention;‡ if this be the case the nation possesses the honour, as well as the advantage of so useful an improvement. It appears to have originated in the state of Massachusetts as early as the year 1787."§ p. 13—17.

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*Among the documents accompanying the report of the naval committee, made at the present session of congress, there is an estimate of the expense of building a 74 gun ship, by Mr. Humphreys, a ship builder. The whole amount of cost is estimated at 342,700 dollars. Of this 39,100 dollars is put down for smiths works, anchors, &c. more than 1-9th of the whole expense.

† Page 83. Williams and Whiting's edition.

‡ By Gallatin, vide report.

§ In the town of Cummington, (Berkshire) they were first made from hogshead hoop. For these and several other important facts I am indebted to Mr. S. Stafford, one of the proprietors of an extensive iron furnace in this vicinity. [Since delivering the address I have been informed by Mr. Benjamin Peck, of Milton, (Saratoga county,) that the credit of the invention is due to Mr. Josiah Waterman, of the town of Cumberland, in the state of Rhode-Island. It was

"Among the various compounds of iron, there are some which deserve attention from their extensive employment in the arts. *Iron pyrites*, or sulphuret of iron, is one of these. From it the *sulphate of iron*, or copperas, an article much used in dying, is formed. It is manufactnred in large quantities in the states of New-Jersey, Tennessee and Vermont.* The process by which it is obtained is so simple, that it requires but little ingenuity and care to prepare it pure. The New-Jersey copperas is by many considered superior to the imported article.*

"The *chromate of iron* has been discovered by Mr. Godon in the vicinity of the city of Baltimore." p. 19—20.

We have the following concerning copper:

"In the scale of importance *copper* holds a station only inferior to iron. Its history is however not so creditable to American enerprize It is found in the states of New-York, New-Jersey, Connecticut, Massachusetts, Virginia, and South Carolina, and travellers also state that there are rich mines on the south side of Lake Superior, within the American territory. In many of these places the ore is rich, yielding in some instances 75 per cent. of pure metal, together with some silver, yet at present there is not a a copper mine worked in the United States. Congress, in 1800, authorized the president to employ an agent for the purpose of exploring the country near Lake Superior. This enterprise, which promised us an acquaintance with our mineral riches, was aban-

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commenced as early as the year 1776, and the first use to which they were appropriated was the making of cards. Mr. Peck is now the partner in the iron trade with the inventor's son.]

*The quantity of copperas annually manufactured in Tennessee is 56,000 lbs. in Vermont 8,000 lbs. Mitchill's View of Amer. Manufactnres, in Amer. M. & P. Register, vol. 2. p. 411. By calcining copperas to a red heat, the *crocus* of commerce is formed.

†Pyrites is found in other states beside those above enumerated, particularly in New-York and Massachusetts.

doned before the agent had commenced his journey.* In 1719, a copper mine was discovered in New-Jersey, by Mr. Schuyler, situated between the Passaic and Hackensack, which still bears his name. The ore was found to be rich, but was shipped to England in its raw state, in consequence of the prohibitory regulations of the British government. Before the year 1731, the proprietor had exported to Bristol, about 1386 tons. The mine continued to be worked with success, until the commencement of our eventful revolution, since which period the attempts made to work it have failed.†

"Copper in its various mineral forms has been found in different parts of the country, and many elegant specimens adorn the cabinets of American mineralogists.‡ The copper used in the arts is, however, altogether imported. It is procured from Cornwall in England, and from South America, principally in the form of sheets and bolts. In this state, it is applied to many important purposes. It is used in very large quantities in ship building. Coppering vessels is found to preserve them longer from the effects of warm climates, as also from the attacks of the *Teredo Navalis*, which destroys the wood. It facilitates sailing, by presenting a smoother surface.

"The various mordants which have this metal for a basis, such as the *sulphate* and *acetate of copper*, commonly known by the names of blue vitrol, and verdigris, are altogether obtained from foreign countries. The latter is procured from France.

"Copper is also extensively used in combination with zinc, tin, and other metallic substances. These alloys, together with their application in manufactures, will be mentioned, after noticing the original metals." p. 20—21.

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* Med. Repository, vol. 6. p. 211.

† Latrobe's account of the Schuyler copper mine in New-Jersey. Med. Repository, vol. 6. p. 319.

‡ Vide the additions of the American editor to the article copper in Rees' Cyclopedia, for an account of the various species of copper found in the United States.

The following shall conclude our extracts:

"*Tin* is procured from England, South America, and India. It is imported in the form of sheets, which is iron tinned over, or of block tin. From the first are manufactured vessels for culinary and domestic uses. This branch of industry is almost solely monopolized by the states of Connecticut and Massachusetts. It is estimated that in the former, tin plates and iron wire to the amount of 250,000 dollars, are annually used in this manufacture, and the annual value of the tin plate works of Massachusetts, according to the enumeration of 1810, is 37,000 dollars.* These wares are sold throughout the union from Louisiana to Vermont.

"Tin is also used in coating articles made from iron, to remedy the inconvenience arising from the facility with which the latter metal rusts. In this form, many things are prepared, particularly such as are required in horsemanship, such as harness, stirrups, bridles, &c. Several small establishments of this nature are springing up in various parts.

"The principal application of block tin, is its union with lead and antimony, forming the compound called *pewter*, from which various articles are made.†

"Among the alloys of copper, a notice of those most important as well as most commonly used in the United States, will be sufficient.

Brass is the most valuable. It is generally formed by calcining the calamine (the ore of zinc) with charcoal, and afterwards fusing the compound with plates of copper. After refining it, the brass becomes an article of commerce, and is imported into this country, principally from Great Britain, whose mines of calamine in Derbyshire, supply a large proportion of the brass works in Europe.‡

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*Morse's Geography, article Massachusetts.

† It is stated in Mr. Spafford's Gazetteer of the state of New-York, (now in the press,) with which I have been favoured by the author, that ores of tin have been found in the Highlands, and in Essex and Clinton counties.

‡ Chaptal's Chemistry, vol. 3, p. 285.

This alloy is found to be infinitely more ductile than the original metals, and is in consequence drawn into wire, from which pins, sieves, &c. are manufactured. In this country it is principally used in the making of stills, and other vessels. Buttons are also made in small quantities.*

"The union of copper and tin forms *bell metal.* A foundery for casting bells was erected more than forty years since in Massachusetts,† and the business has been continued in that state ever since; in 1810, the value of those cast was 3,555 dollars. Similar establishments exist in Philadelphia, and in the vicinity of this city.

"Brass guns, as they are styled, are formed from a similar compound; the zinc is generally considered a useless addition. They are cast at several founderies.

"The tinning of copper vessels for domestic purposes, is a common occupation. From the deleterious properties of copper, it has been proposed to substitute zinc; and the project certainly deserves encouragement.‡

"Tin is found to have a great affinity for mercury, and has, in consequence, been used in silvering *looking glasses.* This trade is conducted to a considerable extent in our large cities.

"Traces of several other metals have been observed throughout the United States.

"*Antimony* has been found in the state of Connecticut, and indications of its existence are said to occur in the southern states and Louisiana. When it is recollected, that in conjunction with lead, it forms *type metal*, its value appears manifest. Without it the art of printing, an art which rescued the world from barbarism, cannot be conducted.§

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* The union of copper and zinc by various processes, and in different proportions, forms pinchbeck, tombal, tinsel, manheim-gold, &c.

† Holmes' Annals, vol. 2. p. 296.

‡ Various proportions of copper and tin, form bronze and speculum metal.

§ Chaptal mentions that the best proportion for type metal is 80 parts of lead

"A mine of *Cobalt*, combined with arsenic, has been discovered in North Carolina, and another of the same kind (*white cobalt*) exists at Chatham (Connecticut.) In its state of oxyd, this metal is used for giving various shades of blue to glass and enamel. All the *zaffre* and *smalt* (the names by which it is known in commerce) used in this business are at present made in Germany.* It is contemplated to commence a manufactory of smalt at the North Carolina mine.

"*Manganese* in the state of black oxide, has been discovered at Ancram,† and several other places in this state, and *molybdena* exists in various situations. *Arsenical pyrites* are found in the district of Maine. To Mr. Hatchett we are indebted for the analysis of *columbite*, containing a metal once supposed peculiar to this country, but which the latter investigations of Wollaston have identified with tantalum.‡ *Menachanite*, *rutile*, and *negrine*, all species of *titanium* or *menachine*, have been observed.§

"In *silver* and *gold* we fortunately are not abundant. To our citizens, indeed, the discovery of a bed of gypsum, or of salt, would be of infinitely greater use than the possession of the Peruvian mines. The latter metal has, however, been found in Virginia on the surface of the ground, and in Cabarras county in North Carolina. In 1805 a quantity of virgin gold was brought from the latter place to the national mint, and coined into money to the amount of 11,000 dollars. It still continues to be found in creeks, and the sand bordering on them. In coinage, copper is added to the gold to give it tenacity.

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and twenty of antimony. The antimony renders the compound harder, but if too much be added, it becomes brittle.

* Vide Rees' Cyclopedia, art. *cobalt*, for a detail of their manufacture; also Nicholson's Dictionary of Chemistry.

† By Dr. Bruce, vide Med. Repository, vol. 11. p. 442.

‡ Bruce, No. 1. Appendix. Gov. Winthrop sent this mineral to Sir Hans Sloane, whose collection forms a part of the British Museum.

§ Maclure's Observations on the Geology of the United States, in the American Philosophical Transactions, vol. 6. p. 421.

"The manufacture of plated ware, and jewelry, is very extensive and valuable. Mr. Gallatin states the annual value of the first alone, in Philadelphia, at 100,000 dollars. This trade flourishes in every city on the continent." p. 21—24.

Scarcely two years have elapsed since we had occasion to notice a performance by Dr. Beck, as a graduate of the University of New-York. We are pleased that in so short a time we have an opportunity of renewing our acquaintance with him. In the infant state of the arts in this widely extended and highly diversified country, where so little has been effected, and where so much remains to be done, where (we trust our application of the language of scripture will not be deemed irreverent,) the harvest truly is great, and the labourers are so few, we greet with a hearty welcome every new and ardent adventurer in the extensive field of science. In the interesting department of natural history, the productions of America call loudly upon our attention; and we hope that ere long the erroneous, meagre, and partial accounts of illiterate and mercenary tourists will give place to the ample and faithful details of the learned and the liberal, who possess the ability and the disposition for investigations of this kind, and who alone, by a proper residence among us, are qualified for the undertaking.

ART. III. *An Inaugural Dissertation on the Eupatorium Perfoliatum of Linnæus: submitted to the public examination of the Trustees of the College of Physicians and Surgeons in the state of New-York, Samuel Bard, M. D. President, for the degree of Doctor of Medicine, on the 4th day of May*, 1813. *By* ANDREW ANDERSON, A. B. *Member of the Medical and Surgical Society of the University of New-York.* New-York. C. S. Van Winkle. 8vo. pp. 75. 1813.

An Inaugural Dissertation on Angina Pectoris, submitted, &c. By HENRY BOGART, A. B. *Member of the Medical and Surgical Society of the University of New-York.* New-York. C. S. Van Winkle. 8vo. pp. 56. 1813.

PLURES *habent doctores quam doctos*, is an adage which we fear applies with too much truth to most American universities. Certain it is that in this age of literary honours, those titles of distinction, which once were considered the surest evidence of the superior learning and talents of the persons upon whom they were bestowed, have lost much, very much, of their former value. But painful as the reflection upon a circumstance of this kind must necessarily be to all who are solicitous for the promotion of real science, we shall not here inquire into the causes which have led to it. To those acquainted with the nature and plan of government of the numerous collegiate establishments in the United States, such an examination would be unnecessary; and for the satisfaction of those who are not, we should have to indulge in an extent of remark incompatible with our prescribed limits. We cannot, however, altogether omit at this time to make one or two observations on the publica-

tion of an inaugural dissertation as the duty of every candidate for medical honours. We altogether differ from those who consider this as an "unnecessary procedure," and are decidedly of opinion, that it is one of the most important and effectual regulations that can be adopted by our universities, if they wish to attain a becoming respectability, or even to preserve the reputation they may have acquired, and that it should in all cases be enjoined as an indispensable requisite to the obtaining a diploma. The reasons which we have heard assigned why he who is to have the honours of a liberal profession conferred upon him, should be exempted from presenting those claims for such distinction, which by the learned among other nations have always been demanded, are, to say the least of them, weak and unsatisfactory. If the candidate for the medical doctorate have nothing more to offer for that high honour than an "imperfect transcript of the opinions of his preceptor;" if his performance be "crude and unfinished," serving only "to diminish the reputation of the school" in which he was educated, and such as "at the expiration of a year or two he himself will be ashamed to see or to acknowledge,"* what right, we ask, has he to expect to be crowned with the academic wreath, and to assume that station to which his talents and attainments give him no title. And where, we may add, is the individual who, aware of the consequences thus resulting to society, by countenancing so lax a discipline, can yet conscientiously become an accessary to so great an evil.

Principals and trustees, presidents and professors, would

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* Incredible as it may seem, these reasons, among others, have actually been assigned in excuse for the present American method of dispensing medical honours. See Barton's Medical and Physical Journal, vol. iii. part i. p. 184—185.

do well to recollect, that the reputation of a seminary is not independent of the *acquirements* of its pupils. If the present system, now so fashionable in some of our universities, be pursued, and the chief emulation be the *number* of graduates, it is not hazardous to predict that at no distant period, what has heretofore been deemed a liberal science will be degraded into a mechanical art; and that a diploma in medicine will become as common, (we had almost said as little respected,) as the *license* of many of our county medical society.

We were led to these reflections upon opening the interesting pamphlets before us. It is an auspicious omen, that comparatively so many of the graduates of the College of Physicians and Surgeons publish their collegiate exercises for their degree, when the statutes of the university do not exact it from them. The late union of the medical schools of New-York, which we have elsewhere noticed,* promises to be productive of the greatest advantages to the interests of science in this country; and among other benefits which it will confer, we hope will be that of making what is now a voluntary act on the part of the student a prescribed and peremptory duty.

The object of Dr. Anderson's dissertation is to ascertain the medical virtues of one of the indigenous productions of this country, and thus to increase the materia medica of the United States. For this purpose he made choice of the eupatorium perfoliatum, one of the most common of our vegetable products, and which, for a considerable time, has been employed as a domestic remedy in the management of certain diseases. He has judiciously considered his subject under three heads, and first gives a botanical description of

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* See a subsequent part of the present number of the Register.

this species of the eupatorium; secondly, its character as ascertained by chemical analysis, and thirdly its virtues as a medicine. This genus of plants appears, according to Dr. A. to have been known at a very early date; as in the writings of Avicenna mention is made of the eupatorium. But the particular species to which Dr. A. has more particularly confined his attention, is the eupatorium perfoliatum, which has received a variety of names, such as thoroughwort, Indian sage, cross-wort, bone-set, vegetable antimony, &c.

This plant has been long employed by many of our Indian tribes as a successful remedy in the treatment of intermitting and remitting fevers; and at times, is had recourse to as a useful domestic prescription among families remote from our principal cities. In the treatment of the yellow fever of the United States, and in other febrile disorders, its efficacy as an active sudorific has been acknowledged by many writers. With a view however of ascertaining more particularly its peculiar properties and its virtues, as an article of medicine, a series of experiments was instituted by Dr. Anderson. These experiments are twenty-six in number, and in justice to our author, we do not hesitate to say, they appear to have been conducted with the greatest accuracy, and in a manner highly creditable to his character. The observations on the experiments, and the conclusions which he has drawn from them, are judicious and satisfactory, and evince an unusual portion of chemical knowledge. The whole of this part of Dr. A.'s dissertation will be read with advantage: we regret we have not room for a more copious extract.

"From the experiments which were instituted, and the results which I have attempted to deduce from them, it seems to be satisfactorily proved, that the eupatorium perfoliatum contains, first,

a free acid; secondly, tannin; thirdly, extractive matter; fourthly, a gummy matter; fifthly, a resin; sixthly, azote; seventhly, lime, probably the acetate of lime; eighthly, gallic acid, probably modified; ninthly, a resiniform matter, soluble in water and in alcohol, and which seems to contain a bitter principle. That the free acid may be obtained from all parts of the plant: that tannin is obtained in much the largest quantity from the leaves, and least from the roots: that the extractive and gummy matter resides chiefly in the roots: that the leaves and flowers also contain a larger proportion of resin than the roots: that azote exists in the flowers, leaves, and roots." p. 49.

The pharmaceutical preparations of this species of the eupatorium which he recommends, are the decoction of the flowers and of the leaves, infusions of the same parts, the leaves in substance pulverised; and a tincture of the flowers and of the leaves prepared with proof spirits. This last form is the most pleasant, and, at the same time, the most powerful; for proof spirits was found to be the best menstruum.

The eupatorium, he concludes from experiment, possesses most of the properties belonging to the peruvian bark; and that as a tonic and sudorific it will not suffer by comparison with most of the articles drawn from the vegetable kingdom; such as the marubium vulgare, the anthemis nobilis, &c.

From the opportunities which Dr. A. enjoyed of witnessing the employment of this plant in different diseases in the New-York Alms-House, and from the observations and experience of several distinguished practitioners, he was led to believe it an important and efficacious remedy in the treatment of most febrile disorders, in intermitting and remitting fevers; in yellow fever and other diseases of specific contagion; in many cutaneous affections, and in diseases of general debility. As a tonic its virtues were practically illustrated

in several cases of intermittent fever the particulars of which are here minutely given. In remitting fever he also had many opportunities of testing its value. In the treatment of the yellow fever he warmly recommends its use from the practice of the venerable president of the College of Physicians and Surgeons of New-York, Dr. Bard, and from that of Dr. Hosack. In the late typhoid peripneumony which prevailed with so great mortality in different parts of the United States, Dr. A. has also brought forward a number of interesting facts which prove the efficacy of the eupatorium as a sudorific and tonic after proper evacuations had been employed. In a peculiarly obstinate cutaneous disorder it was found of singular efficacy, and in dropsy, when a disease of debility, an alkoholic tincture of the pulverized leaves and flowers was very liberally had recourse to, and with singular success.

We cannot conclude without expressing our satisfaction with the interesting dissertation of Dr. Anderson.

Few diseases in the system of nosology are more peculiar in their character, or fatal in their consequences, than *angina pectoris*. It therefore cannot but appear remarkably singular, that so important a disorder should have altogether escaped the attention of the ancients, and that we should be indebted to authors of comparatively late times for all that has been written concerning it. In 1768, Dr. Heberden read before the College of Physicians of London, an account of a disease of the breast, distinguished by very peculiar symptoms, and which he published in the second volume of the Medical Transactions. He denominated it angina pectoris, a name most characteristic of the disorder. Previous to the time of Dr. H. however, some notice was taken of an affection in many respects similar to that which

he described; and from the apt quotation, by Dr. Bogart, of the *Consultationes Medicæ* of Hoffman, and of the elaborate work of Morgagni, we have no doubt that these distinguished observers had witnessed cases of the same kind. The valuable treatise of Heberden gave rise to a spirit of inquiry on the subject, and interesting observations were soon after made and recorded respecting it, by Drs. Wall, Fothergill, and Percival. Parry and Butter, of Great Britain, also furnished the profession with distinct treatises on it, the former under the name of *syncope anginosa*, the latter under that of *diaphragmatic gout*. The German writers, Elmer and Schmidt, directed their attention to it, and distinguished it by the names asthma convulsivum and asthma arthriticum. Dr. Darwin took the same view of it, and called it asthma dolorificum; but Darwin, however distinguished for his verses, is scarcely to be quoted as an authority in the practice of medicine.

We shall give Dr. Bogart's description of the symptoms of this disease in his own words:

"The attacks of angina pectoris are, in most instances, sudden, and occur in those who have previously enjoyed perfect health. In a few cases, various painful affections of different parts of the body have been observed to precede them. Spasms and indigestion of the stomach, and pains in the limbs, are not unusual, which are, for the most part, removed, or diminished in violence, on the appearance of the disease, the first symptom of which, is an acute pain or stricture, commencing in the region of the sternum, and shooting, with peculiar pungency, in the direction of the pectoral muscle, confining itself chiefly to the left side, and sometimes affecting the left arm.* In two cases recorded of this disease, the

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*In twelve or thirteen persons, whom Dr. Wall had seen, the pain was in the direction of this muscle, affecting one, or commonly, both the arms. It is remarked by Dr. Heberden, that a soreness has been felt in these parts.

sensation in the superior extremities was compared, by the patients, to the rushing of a hot fluid; very often it is that of a numbness only. It is generally noticed when the disorder is considerably advanced, though sometimes it is altogether absent; being by no means, as Dr. Parry observes, essential to angina pectoris. The patient is usually seized in this manner while walking, or on going up an acclivity. Though the pain is violent, and comes on suddenly, yet it generally is of short duration, and, in some instances, hardly engages the attention of the patient. A case, however, is related by Dr. Parry, of the Rev. Mr. S. in whom the pain continued from the first attack of the disease until its fatal termination, and, in which, it was without an interval, subject only to exacerbations. On standing still, the pain in the commencement of the complaint ceases; but, after repeated paroxysms, it remains for some time, accompanied with oppressed breathing, anxiety, sighing, palpitation of the heart, and coldness of the extremities; an agonizing struggle for existence ensues, attended with an apprehension of instant death.

"This pain, or constriction, comes on in paroxysms, which in the beginning of the disease do not take place so frequently or so intensely as when it is more advanced.

"The paroxysms of this affection, as to their duration, are also various; they, at one time, terminate in a few minutes, and at another, last hours, and even days, and occasion the severest distress. Dr. Heberden met with one case, in which the paroxysm continued for several days. Dr. Black, of Newry, Ireland, has recorded a very interesting example of the disease, the last paroxysm of which commenced on Friday morning, and lasted till Saturday evening. When I visited my patient, says the author, I found him in exquisite torture; the pain was constant, but every minute, or every two minutes, it shot with peculiar violence and pungency from the left breast towards the scapula, producing each time a convulsive start, in which every muscle in the body seemed to be affected. He continued in the greatest agony till four o'clock,

Sunday evening, when he expired.* Repletion of the stomach, walking, the indulgence of the passions, especially those that are violent or attended with anxiety, are frequently their exciting causes. In the case of Mr. J. Hunter, the spasm was most usually excited by anxiety, or by the indulgence of the violent passions: the more tender affections of the mind did not produce it; he could relate a story which called up the finer feelings, as those of compassion and admiration, so as to make him shed tears, without suffering from a return of the pain. But as the disorder proceeds, no particular cause is essentially necessary for the return of the paroxysms. The pain is often relieved by eructations of wind, by straitening the vertebræ of the thorax, and by resting after a full inspiration. It is always increased by motion, and mental irritation.

"No uniformity is observed in regard to the state of the pulse during the paroxysms. It may be remarked, however, that the best written histories of the disease, do not afford satisfactory information on this point. It is represented to be sometimes not materially affected. In two cases, recorded in the Medical and Physical Journal, vol. 6. p. 321, the arterial system was not much affected, even during the fits of pain and oppression, although the patients suffered little short of suffocation; and Heberden also observes, that sometimes it is not in the least disturbed.† At other times, essential deviations from its healthy state have been noticed; the circulation being much affected; the pulse contracted, small, and irregular. Its condition probably varies, and depends on the severity and duration of the pain; yet, there can be little doubt, that the pulse must, at times, give evidence of disturbed circulation. Doctor Hosack, who has frequently met with the disease, mentions, that in the case of a patient whom he attended, and who had suffered repeated attacks, the pulse was remarkably hard. In the intervals of the paroxysms, it is regular and

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*Mem. Med. Society of Lond. vol. 4. p. 267.

†Diss. Med. de Angina Pect. auct. C. J. Schmidt, in Annals of Med. vol. I. p. 198.

natural, and the patient is free from every symptom of the complaint." p. 24—29.

Dr. Bogart enters at some length into a consideration of the causes of this remarkable affection, and succinctly delivers the opinions of the most eminent practitioners relative to them. Dr. Heberden concluded that the principal symptom was produced by a convulsion of the part affected. Dr. Wall, having discovered indurations of the semilunar valves at the origin of the aorta, with other diseased appearances of the heart, attributed the origin of the complaint to a rigidity of those valves. Dr. Matthew Baillie maintains a similar opinion relative to the induration of the valves of the heart. Dr. Fothergill believed that excesses of passion and anxiety contributed more to the increase of the disorder than a combination of all the other causes. Dr. Parry's theory is, that angina pectoris arises from an induration of the coronary arteries, and that this kind of mal-organization acts by diminishing the energy of that organ.

We have not room for the arguments Dr. Bogart has adduced in opposition to this popular theory of Dr. Parry: we think he sufficiently disproves it, from the experience and observations of many distinguished practitioners. The opinion which Dr. B. forms of the nature of angina pectoris is, that it proceeds from a *plethora of the blood-vessels, more especially from a disproportionate accumulation in the heart and larger arteries;* an opinion maintained by Dr. Hosack, in a former number of the Register, and to which Dr. B. refers.* He considers the large accumulations of fat, the

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* American Medical and Philosophical Register, vol. ii. p. 365—366.

effusion of water in the thorax and pericardium, the distended state of the vessels, and even the bony deposits occasionally met with in the valves of the heart, as the effects of such plethora.

"We observe in confirmation of his (Dr. H.'s) opinions, that almost every writer on the complaint, has commenced his cases by remarking the age and habit of the patient. The advanced life and corpulent habit are of so frequent occurrence, that no doubt can be entertained of their relation to the disease. The season of the year at which the first attack commenced, is not recorded with the same particularity; but when noticed it was most usually in the winter and spring of the year.* Most of the patients afflicted by the disorder, had lived in a sedentary manner. Spontaneous discharges of blood, from different parts of the body, giddiness, and numbness of the extremities, were often observed, and are all evidences of a plethoric state of the system." p. 40.

The summary of morbid appearances with which we are furnished is taken from Dr. Parry's Inquiry, but considerably altered and enlarged.

On the *cure* of this afflicting and unfortunately too fatal disorder, we shall insert Dr. B.'s valuable remarks entire.

"Instances of the angina pectoris have frequently occurred; its symptoms and causes have been investigated; but small is the progress which has been made in the discovery of remedies necessary for its cure.

"The question naturally arises, to what is this to be attributed? Previously to our answering, we shall examine, in as concise a

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*Vide Med. Mem. vol. i. p. 376, also the same, vol. iv. p. 261. New England Journal, vol. i. Med. and Phys. Jour. vol. xvii. p. 9. also cases of Rev. Mr. S. and Mr. M. in Parry's Inq.

manner as may be consistent with perspicuity, the principles on which the different modes of cure have been proposed, and the success that has attended them.

"Doctor Heberden considered spasm as the cause of the complaint, and, therefore, prescribed those medicines which relieve and quiet convulsive motions; opiates effectually prevented or weakened the night fits. Bleeding, vomits, and other evacuants were of disservice in his hands; it is not mentioned whether they were used during the paroxysms, or in the intervals.

"The advocates of the theory that the disorder is occasioned by an accumulation of fat about the heart, endeavour to remove or diminish it by evacuating the thinner fluids of the body, by means of issues, and by increasing the secretions.

"Dr. Parry, who attempted to prove that ossification of the arteries depends on an increased impetus of blood, more especially when amounting to inflammation, supposed that abstinence from bodily exertions, and attention to the means of obviating an inflammatory diathesis, would have considerable effect in preventing the organic lesion of the coronary arteries.

"On the attack of this malady, his first indication is to obviate the fulness of the vessels, which acts by oppressing the heart, weakened by disease, and deficient in energy. Regimen and medicine are the means used for that purpose; of the latter, he recommends bleeding, purging, and issues.

"Speaking of blood-letting, he remarks, that it must be employed with great caution; that a degree of stimulus may be left sufficient for the purposes of healthy circulation. He confesses that he is unacquainted with the actual effect of that remedy.

"Purging appears to him to disorder the circulation in so great a degree that it cannot be safely employed.

"In cases where there may be reason to suspect plethora, issues are recommended, especially when danger is to be apprehended from the more speedy evacuation by venesection. During the paroxysms, in cases of imminent danger, he advises bleeding, the use also of purgatives and enemata. Stimulants, he observes, can

be safely taken, only so far as they may be required to remove flatulency from the stomach; or their use should be referred to that period, when, after the failure of the other means suggested, the pulse is not at all, or scarcely to be felt.

"In fine, Dr. Parry regrets, that the most important part of his subject, that which respects the cure, or relief of the complaint, should have been so defective.

"On the supposition, that a diminished energy of the heart is the cause of the disease, the argentum nitratum has been prescribed; taken into the stomach, it was supposed to produce its effects through the medium of the nerves.

"Fowler's solution of arsenic, the application of a solution of the tartrite of antimony to the breast, cituta, hyosciamus, and other narcotics, are all said to have been used with some advantage.

"Dr. Schmidt observes, that the radical cure is very difficult, especially if the disease has been of long duration, but that it is not to be considered as an incurable disorder; he had met with several instances of patients who had laboured under it and were restored to perfect health. Regarding it as a case of spurious gout, he has two indications of cure, which it would be needless here to mention. The angina pectoris can have no farther relation to the gout, than as this latter disease depends upon an overloaded condition of the vessels, which, indeed, is one of its most common causes.

"We have thus stated, as far as the limits of an inaugural dissertation will permit, the respective modes of cure adopted by different writers. That they should have differed so materially, was to be expected from the different views entertained by medical men as to the nature of the disease. Regarding some one remarkable symptom or appearance as characterestic of the disorder, to the exclusion of others, equally important, they have necessarily, in many instances, limited their view, and been inadvertently led into error.

"We have already given the particular opinions entertained by

Dr. Hosack relative to the nature and treatment of angina pectoris; the successful result of his practice in the complaint appears to afford sufficient evidence of their correctness. The remedies which he prescribes, with most advantage, are those which are calculated to diminish the fulness of the system; for this purpose he has recourse to copious and repeated blood-letting, active cathartics, as jalap, calomel, gamboge, and other evacuants; and for the removal of the spasm, palpitation of the heart, and coldness of the extremities, æther, volatile alkali, the compound spirits of lavender, and other diffusible stimuli, are exhibited. Opiates, by lessening, and occasionally suspending the spasm, are also used with advantage, especially after blood-letting has been freely employed. Warm bathing and friction of the extremities, from the experience of their beneficial effects, are also highly useful by promoting the circulation in the extremities, and a determination to the surface of the body, and thereby proportionally diminishing the fulness of the heart and larger vessels.

"Independent of the medicines here recommended, our chief hope for preventing the returns of the disease must be placed in the diet and regimen. The diet of the patient should be plain, easy of digestion, and composed of a due proportion both of animal and vegetable food; but the use of wine, ardent spirits, and especially malt liquors, and the usual condiments of the table, should be carefully avoided, or very sparingly taken; late suppers should also be totally prohibited.

"Regular and daily exercise, flannel worn next the skin and frequently renewed, by their effects in promoting the excretions, no less contribute to counteract the plethora to be guarded against.

"A control of the passions, as has before been observed, is no less necessary to prevent a return of the paroxysms of this disease." p. 49—56.

DOMESTIC INTELLIGENCE.

Medical School of the University of the State of New-York.

In the Register for July last, p. 105, &c. the editors presented their readers with, "An Historical Sketch of the Origin, Progress, and Present State, of the College of Physicians and Surgeons of the University of New-York." It is with great pleasure they are enabled to state, that since that time a union of the Medical Schools of New-York has taken place, and that the Faculty of Physic of Columbia College, united with the College of Physicians and Surgeons, now constitute the state medical establishment, under the patronage of the Legislature and the Honourable the Regents of the University.

The following circular address, announcing the union of the schools, and the ample system of instruction now afforded by the college, has accordingly been published by the university. Ed.

University of the State of New-York—College of Physicians and Surgeons.

The union of the College of Physicians and Surgeons with the Faculty of Physic of Columbia College, so long desired by the friends of science, has at length most happily taken place. In April, 1811, the honourable the regents of the university expressly endeavoured to effect this important

object; fully impressed, as they professed themselves to be, "with the advantages to the state, which a well organized medical school in New-York must afford." For this purpose the Regents new-modelled the school of medicine at that time, with a view of introducing into it the professors of the medical school of Columbia College, and other eminent and distinguished individuals; that thus united in one institution, the medical talents of both seminaries might be a greater benefit to the public, and still better entitled to the patronage and encouragement of the legislature.

The following arrangement, therefore, has been concluded, and will be carried into operation at the ensuing session of the College of Physicians and Surgeons, which will commence on the first Monday of November next, at their new and spacious buildings, recently completed in Barclay-street.

Anatomy, Physiology, and Surgery, by Dr. WRIGHT POST, and Dr. JOHN AUGUSTINE SMITH.

Theory and Practice of Physic, by Dr. DAVID HOSACK.

Clinical Surgery, at the New-York Hospital, by Dr. POST.

Clinical Practice of Medicine, at do. by Dr. WILLIAM HAMERSLEY.

Obstetrics and the Diseases of Women and Children, with practical illustrations at the Lying-in-Hospital, by Dr. JOHN C. OSBORN.

Chemistry and Pharmacy, by Dr. WILLIAM J. M'NEVEN.

Medical Jurisprudence, by Dr. JAMES S. STRINGHAM.

The Principles and Practice of Surgery, by Dr. VALENTINE MOTT.

Materia Medica, by Dr. JOHN W. FRANCIS.

Natural History, including *Botany* and *Mineralogy*, by Dr. SAMUEL L. MITCHILL.

Natural and *Experimental Philosophy*, by the Vice-President of the College, Dr. Benjamin De Witt.

The Lectures on Anatomy, the Principles and Practice of Surgery, the Theory and Practice of Physic, and on Chemistry, will be delivered *daily*, and the other courses of instruction *three* times in each week throughout the session, which will continue from the first Monday of November to the first Monday in March.

Although the most liberal and extensive system of medical and philosophical instruction has thus been provided at this institution, the expense of education to the candidate for medical honours is not increased beyond that of any other college in the union; as none of the courses are made indispensably necessary for graduation, and the student is at liberty to attend any course or courses he may think proper; the professors insisting upon the attainments of the candidate, and not upon the number of courses, nor the number of years he may have attended at the University.

By order,

SAMUEL BARD, M. D. President.
JOHN W. FRANCIS, M. D. Registrar.

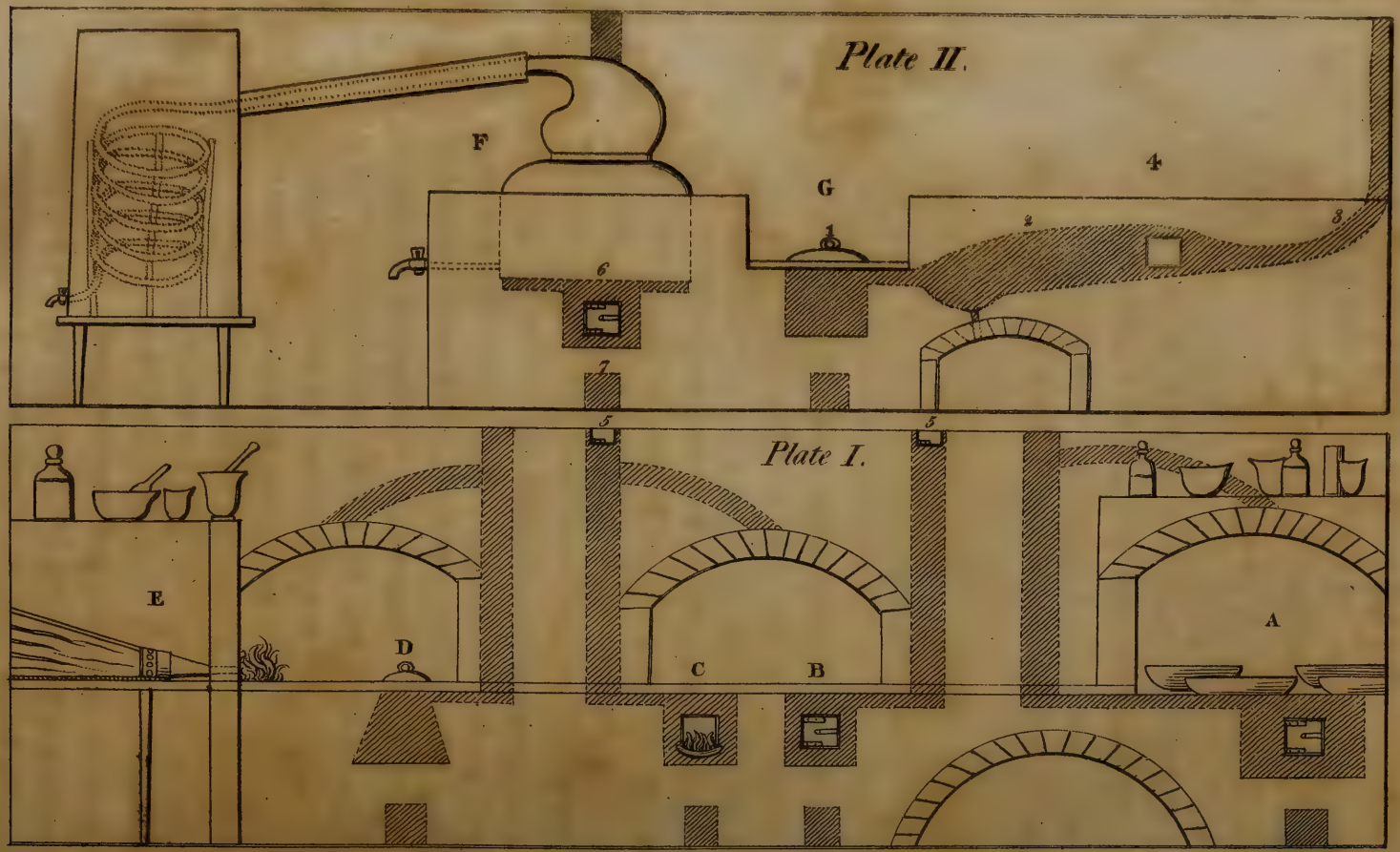
New-York, September 21, 1813.

Front View of a range of Fixed Furnaces, set up by the Professor of Chemistry, Dr. Mac Neven, *in the Laboratory of the College of Physicians and Surgeons, N. York.*

(See the annexed engraving.)

PLATE I.

A, is a flat sand-heat, to hold evaporating vessels. It consists of two plates of cast iron joined by a rabbet, and



LABORATORY OF THE COLLEGE OF PHYSICIANS & SURGEONS.

having a border two inches high. It is four feet in length and two in breadth. The fire is made at one end and the flue rises from the other. In their progress to the flue the flame and smoke are made to describe a zig-zag course, and detained as long as possible under the plates. It is separated from the other furnaces by a thin partition of brick, and covered by a light arch, so as to secure it against dust. A curtain may be hung before it for the same purpose. From the middle of the arch there goes off a conduit in an oblique direction, marked by the dotted lines, to convey the vapours into the chimney. The floor over the arch receives some of the furniture of the laboratory.

B, is a furnace with a cast iron pot, four inches deep, to be used as a sand bath, for distillation, or as a boiler. When the pot is taken out, a thing easily done, as it rests upon the brick work by a circular rim, called a flange, the furnace may be used for naked distillation.

C, a muffle furnace. The muffle is introduced by the front opening. The shading shows the pan to hold live coals, before the muffle door.

D, a very powerful draught-melting furnace. The chimney goes off from it horizontally, and the opening is horizontal. It is eight inches square at top, and ten over the grate. This declination causes the fuel to fall regularly downward. It is ten inches deep to the lower part of the chimney.

E, a forge hearth, which, with the blast pipe and bellows, are in the same plane, as in the ordinary smith's forge.

The forge, and the three last mentioned furnaces, are covered with arches pierced with conduits, leading into the flues, in the same way as the sand heat.

PLATE II.

In this a front view is given of another side of the laboratory.

F is an eight gallon still and worm tub. It is of the usual form, and contains a water bath. The same head is so contrived as to admit of being used in distilling with the water bath, or without.

A shallow trough is placed between the still head and the refrigeratory to receive the conduit-pipe, and barely as much water as will wet its upper surface. The object of this contrivance is to aid and render uniform the condensation through cold water, by means of the refrigerating powers of evaporation.

The same mode, on a suitable scale, might very profitably be employed in large distilleries. In these, wherever the liquor is condensed by the operation of pumping, as there are occasional intermissions of work, and sometimes negligence, the temperature is constantly varying in the worm tub. When the temperature is too high, a portion of alcoholic vapour passes away uncondensed, and is easily distinguished by its smell through the apartment. The loss after this manner is frequently very considerable.

The irregularity of condensation causes a corresponding irregularity in the evaporation from the body of the still. At times it is intermitted and the cold air rushes in and retards the process; this air is soon rarified and expelled in strong puffs, which take with them some more of the spirit, and cause a fresh loss.

When the refrigeratory can be supplied by a running stream those evils are avoided, because, in that case, the temperature is always low and equal; but wherever the supply must be occasionally interrupted, the principle em-

ployed in this laboratory would have the most beneficial effect. The more length given to the conduit pipe and trough, the better; and though the water in the latter should be heated even to boiling, it only carries off the faster a greater sum of caloric from the pipe and its contents. The effect of this evaporation, in condensing the spirit, is more rapid than that of cold water, for the water does not so quickly change its place from the contact of the worm. Both modes united have been found very efficacious in promoting a quick condensation of the spirit; in keeping up a uniform degree of evaporation from the body of the still, and preventing that temporary vacuum which occasions the irruption of rarified air in puffs, with the waste of alcohol. Lastly, the liquor is found to run in a cold steady stream, which is the best proof that the process is properly conducted.

G, is a reverberatory furnace. 1, is the fire place; it is constructed like the air furnace, and admits of being used as one. 2, is a vertical section of the reverberatory, in which the floor is seen to incline downwards to the fire, near which the fluid matter is collected in a sort of bason, and let off by a tap-hole in its bottom that traverses the arch.

All these furnaces are supplied with cold air from without-outside the building, by means of channels under the floor, and opening obliquely from behind into the ash pits, the doors of which need not therefore be opened, unless to clean them.

3, the chimney of the reverberatory.

4, a space on the top of the reverberatory, on which any thing may be laid aside.

Over both ranges a screen projects level with the ceiling, and hanging down in a sloping direction to about seven

feet from the floor. Its use is to collect and carry away into the funnel the fumes that might otherwise escape into the laboratory.

5, ventilating doors open into the chimney, and seen here through a break left in the screen.

6, fire place of the still.

7, ash-pit door.

Singular case of suppression of the Urine; in a letter to Dr. David Hosack, *from* Charles Cotton, A. M. *late of the United States Sloop of War, Hornet, dated Boston, May* 31*st*, 1813.

"Mr. W——B—— aged 16, an officer on board the U. S. Sloop Hornet, 18 days previous to labouring under an almost entire suppression of urine, was attacked with the remittent fever, and was convalescent at the time the kidneys became so perfectly torpid as scarcely to afford any secretion. At first he complained of slight pain in the hypochondriac regions, and that he had passed no urine the last 48 hours. His pulse was natural, and appetite good. I immediately examined, and found that there was but little urine in the bladder. As he had been costive for several days, a cathartic was given, which operated favourably. In the evening I directed the tincture of digitalis, fifteen drops, and spirits of nitrous æther, half a drachm, to be given on going to bed, after using the warm bath. He slept well, and in the morning evacuated about a gill of high coloured urine, with some pain along the neck of the bladder and urethra.

There being no symptoms of nephritis, I ordered the most

powerful diuretics, such as squills, nitras potas. digitalis, &c. and the lumbar region to be rubbed with volatile camphorat. liniment. No unnatural perspiration occurred. He continued in this state for about ten days, evacuating about one gill of urine every third or fourth day. The disorder now assumed a more alarming appearance. The pain increased, his appetite diminished, and a slight febrile paroxysm generally occurred at eight in the evening, and continued about four hours. There were no night sweats; his thirst increased; a solution of the super-tartrit. potass. with a small portion of gin was given him as a common drink. Wine and a vegetable diet, as far as the ship afforded, was also supplied him. Daily use was made of the semicupium and warm mucilaginous drinks.

"Not finding the disease to yield in the least, I put the patient under a course of mercury and digitalis combined, hoping to increase the secretion of the kidneys with that of the glands generally. Camphor ointment was daily rubbed on the loins. Nitric acid was also used. This course was continued until a slight ptyalism was produced, which was gently kept up for some time.

"Finding every thing I had done to have been of little advantage in removing the disease, and that the patient's general health would inevitably sustain great injury by continuing longer under the action of such powerful medicine; as I had used every thing that I had with me from which I entertained any hope, and there was a prospect of our soon being in port, I omitted giving any medicine except the balsam of copaiv. and spirit. æther. nitros.; I also applied a plaster of burgundy pitch upon the loins, and directed wine and the best diet we could procure.

"On our arrival, Mr. B—— immediately went on shore. He was directed to live principally upon vegetables. In the

course of ten days he became better, and in three weeks returned to duty without the least symptom of the disorder remaining. Between fifty and sixty days he evacuated but about one gill of urine every third or fourth day. After he left the ship, no medicine was given but the super-tart. potass.

"There was no appearance of a scorbutic taint of the system. I forbear making any comments."

Observations on the Diseases of Philadelphia, during the Spring and Summer of 1813, *extracted from a letter of Dr. W. Currie to Dr. Hosack; dated Philadelphia, August* 30*th*, 1813.

A typhus fever, with malignant symptoms similar to that which had occurred in different parts of Connecticut and Massachusetts during the winter season for several years past, made its appearance toward the latter end of last December, in a village called Cambden, on the Jersey side of the river Delaware, directly opposite to Philadelphia, and between five and six weeks after in the township of the Northern Liberties, adjoining the upper northern extremity of the city. In the course of the winter several cases of it also appeared in different parts of the city, though it had been confined, nearly, if not entirely, to the Northern Liberties and northern extremity of the city. For several weeks after its first appearance there, it spread in a sporadic or scattering manner, and by no means as a disease diffuses itself which depends on an epidemic or general cause existing in the atmosphere. Its being confined almost exclusively to families in indigent circumstances,

where cleanliness and free ventilation could not be attended to, is also an argument against its being derived from a general cause.

With the return of the mild and refreshing breezes of the spring, the typhus, which had been gradually extending during the winter, declined rapidly, and on the accession of warm weather disappeared entirely; owing, I presume, to the more free admission of fresh air into the apartments of the sick. For I am certain from the few cases that came under my own care, and from the slow and gradual manner in which the disease spread, that it was not derived from any cause that was epidemic, or that existed in the atmosphere at large, or out of the sphere of the apartments of the sick, but was derived from, and propagated by, contagion communicated from the sick to the healthy; whatever certain theorists, misled by Sydenham's visionary hypothesis relative to the particular changes in the atmosphere, in consequence of the influence of hostile planets and volcanic eruptions, giving origin to malignant and pestilential diseases, may credit or teach to the contrary.

As the disease declined, the cases that occurred became in general so mild as to resemble the common remittent.

For some time after the typhus made its appearance in this city, several physicians, though in other respects sensible and reputable, considered all the usual diseases of the season that occurred, as typhus, "sub forma larvata," and confounding the temporary debility and chill which usually occurs at the commencement of fevers accompanied with, or depending on inflammation of one or more of the viscera, as well as at the commencement of other forms or varieties of fever, with that debility and prostration of strength which are characteristic of the typhus gravior or maligna, through its whole course, without waiting for the disease to

develope its true character, they with rash and inconsiderate hand administered remedies of the most stimulating and inflaming nature, the pernicious consequences of which may be more easily conceived than expressed. More than one case of a person in a state of intoxication, to my knowledge, has been mistaken for a malignant state of typhus, in consequence of which opium and cayenne pepper, with strong brandy toddy were administered in large and frequent doses.

Since the first week of July, which was preceded by an almost uninterrupted continuance of hot and dry weather for the space of three weeks, and afterwards suddenly succeeded by unusually wet and cool weather, which continued till the beginning of August, the dysentery has been more prevalent in this city than it has been known for many years.

That the present dysentery does not partake of the nature of the late typhus, or is not a typhus fever, and, consequently, is not derived from the same cause modified by changes in the sensible qualities of the air, or any peculiarity in the constitutions of the patients, is rendered certain, by its being most successfully treated by the same means which succeeded best in former years, when the typhus fever had preceded it.

Proposed Publication of the Rev. T. Alden.

We understand that the Rev. T. Alden, A. M. now of this city, proposes to continue the publication of "American Epitaphs and Inscriptions, with occasional Notes." It is well known that Mr. A. has at a great expense and labour

directed himself for a considerable time past to the study of the antiquities of America, and to the collection of such facts as tend to illustrate its early history, and to increase in value and amount its biographical details. The author intends in his future volumes to vary in some measure from the plan adopted in his first, which not long since made its appearance. The chief object of the work, thus improved, will be to furnish a greater variety of particulars interesting to the antiquary, and to the cultivator of American biography, and to gratify the curiosity of the inquirer into the history of the United States. The attainments, industry, and zeal of the author cannot fail to give interest to the proposed publication, and justly entitle him to the patronage of the public.

College of Physicians of Philadelphia.

At the late annual election, held agreeably to charter, the following persons were duly chosen officers for the ensuing year, viz.

President,	Dr. Adam Kuhn.
Vice-President,	Dr. Thomas Parke.
Censors,	Dr. Caspar Wistar.
	Dr. William Currie.
	Dr. Samuel P. Griffiths.
	Dr. Thomas T. Hewson.
Treasurer,	Dr. Thomas C. James.
Secretary,	Dr. Joseph Parrish.

Observations on the Weather of the City of New-York, for the months of July, August, and September, 1813.

JULY.

The weather of July, this year, like that of the same month of the preceding, was in a remarkable degree characterized throughout for its very great moderation, as to temperature; though we had a greater number of days on which the atmosphere was either overcast or cloudy, or on which we experienced heavy showers of rain. The highest degree of heat was on the 2d, when the thermometer stood, at 7 A. M. at 75; at 3 P. M. at 87; and at 7 P. M. at 74 degrees: the lowest was on the 10th, when at 7 A. M. it stood at 60; at 3 P. M. 62; at 7 P. M. at 54. Rain fell on the 1st, 2d, 4th, 6th, 9th, 14th, 15th, 18th, 19th, 20th, 22d, 23d, 24th, 27th, 28th, and 30th; wind frequently from the east. Perhaps a season is not recollected in which we had a greater quantity of rain and moisture immediately succeeding to the oppressive heat of June as was witnessed this month.

AUGUST.

The greater part of this month the weather was clear and agreeable: the thermometrical heat, though on some days somewhat lower than we are accustomed to experience at this season, was upon the whole such as is generally observed. The lowest degree of heat was on the 18th, when the thermometer was no higher than 59, at 7 A. M.: at 3 P. M. at 74; and at 7 P. M. at 68: the highest degree was on the 6th, when the mercury stood at 7 A. M. at 74; at 3 P. M. at 87; and at 7 P. M. at 76. There were many days on which the thermometer rose above 80. Rain fell in great quantities on the 7th, and also on the 16th and 17th: on

the 24th we had a great shower, accompanied with heavy thunder. Rain fell on the 28th, 29th, and 30th.

SEPTEMBER.

The temperature of the weather of September was considerably lower than that of August; particularly during the latter part of the month. Though there were many clear and pleasant days, we had no inconsiderable number on which either great quantities of rain fell or the atmosphere was overcast or cloudy. The highest range of the thermometer was on the 12th, when the mercury stood at 7 A. M. at 69; at 3 P. M. at 79; and at 7. P. M. at 76. From the 15th the weather became gradually cooler: on the 26th the thermometer stood, at 7 A. M. at 53; at 3 P. M. at 65; and at 7 P. M. at 61 degrees. On the 30th, at 7 A. M. at 51; at 3 P. M. at 54; and at 7 P. M. at 52: a degree of cold not often witnessed at this season. Rain fell on the 10th, 17th, 18th, 24th, 28th, 29th, and 30th.

Quarterly Report of the Diseases which prevailed in the city of New-York, during the months of July, August, and September, 1813.

By a reference to the preceding volumes of this work, the reader will find that notwithstanding the presence of all the requisites which the advocates for the domestic origin of yellow fever have considered necessary to the production of that pestilential disease, the city of New-York has for several years past entirely escaped the ravages of that malignant visitor.

We have enjoyed a similar exemption in the present year,

not only in New-York, but, we believe, throughout the United States. Yet such was the heat during the month of June, in the city of New-York, that the themometer frequently rose above 80 degrees, and on the 18th, as high as 91 degrees of Fahrenheit.

At Raleigh, North Carolina, it rose in the shade to 102 degrees,* and in many parts of the United States, the heat was so intense, as to interrupt the usual labours of the season; the same month and that of July were no less remarkable for their moisture than their temperature.

In August both heat and moisture were combined, and these too aided in their operation by an exceedingly filthy state of our slips, our streets, and our market-places. Such, indeed, in the past season, has been the neglect of our streets, that our public officers were repeatedly called upon through the medium of the newspapers to attend to the removal of those nuisances which have hitherto been deemed the sources of pestilence. In the month of August the quantity of rain that fell was so great, that many of the cellars of Pearl and Water-streets were filled with water, as in the memorable summer of 1798. But notwithstanding the concurrence of all these circumstances, no yellow fever has been engendered, a fact which, like many others this work has recorded, will be passed over in total silence by the advocates for the home-bred production of yellow fever, but which admits of easy solution when we take into view the limited intercourse which latterly has existed between the United States, the West-Indies, and South America, and, we may add, the faithful execution of our improved system of quarantine laws.

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* See the last quarterly report of the weather and diseases.

But although we have escaped the more malignant yellow fever, we have had our usual proportion of febrile diseases in the ordinary form in which they prevail in this climate. Dysentery has been more than usually prevalent both in the city and country; among the poor especially, where cleanliness was not observed, the disease was communicated successively to the members of the same family, and to those who held intercourse with them; but where the air about the patient was preserved pure by the removal of his discharges, frequent change of cloathing, and free ventilation, the disease was extinguished without being communicated even to a second person in the same family in which it originated. Mr. H—— of New-Jersey, about 65 years of age, after a visit to this city in August, upon his return home, was seized with dysentery, attended with all its characteristic symptoms. During his illness, which proved fatal to him, several members of his own family, and many of his neighbours, who visited him, contracted the disease; doubtless owing to neglect in not instantly removing his discharges and purifying the air of his apartment.

Excepting in persons far advanced in life, the disease generally yielded to the usual remedies, viz. the early use of an emetic, emptying the bowels by a cathartic of glauber's salts or castor oil, nauseating doses of antimony or ipecacuanha, and small injections of starch and laudanum, with corresponding attention to the diet and regimen of the patient.

In some instances, in the early stage of the disease, bloodletting and blisters became necessary for the removal of the inflammation; the spiritus mindereri and laudanum, the bowels having been previously emptied, were also in many cases prescribed with great advantage.

Among the diseases of the last three months we have also

had occasion to prescribe for several cases of acute rheumatism, a complaint not usually met with in the warm seasons of the year. Another disease nearly allied to rheumatism, but which most physicians consider as idiopathic, has also fallen under our notice during the last month. The disease referred to is *Tic Douloureux*, or *Neuralgia*, as it has been more correctly denominated by Professor Chaussier.

This affection of the nervous system has attracted the attention of physicians, as a distinct disease, at a much earlier period than is generally supposed.

It was first noticed as such by Dr. Daniel Ludwig in 1673;* by John Hartmann Degener, a practitioner at Nimeguen, in 1724;† by Andree, a French surgeon in 1756,‡ and by Dr. John Fothergill of London, in 1776;§ by the latter it is described under the appellation of a *painful affection of the face.*

By most physicians who have written upon this disease, and even by systematic writers, it has been generally considered as seated in the second branch of the fifth pair of nerves, or in the portio dura of the seventh.

Mr. Abernethy, however,‖ has related a case which was seated in the nerves of the ring finger of the left hand. Mr. Home in his Croonian lecture** has also related some instances of this disease, the effect of an injury to the thumb.

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*Miscell. Nat. Cur. Dec. 1. Ann. III. Observ. 252. "de dolore superciliari acerbissimo."

† Acta Natur. Curios. "de dolore quodam perraro acerboque maxillæ sinistræ partes occupante et per paroxysmos recurrente," vol. 1. p. 347.

‡ Observations Practiques sur les Maladies de l'urethre et sur les plusieurs faits convulsifs, a Paris, 1756, p. 318, &c.

§ Med. Obs. and Inq. vol. 5th.

‖ Surg. Observ. vol. 1. p. 244.

** Phil. Trans. for 1801.

In the Edinburgh Medical and Surgical Journal, a case is recorded by Dr. Verpinet as occurring in one of the nerves of the fore arm, the consequence of a wound from a knife.*

The first case of this disease which fell under the notice of the writer was that of the late Mr. Charles Apthorpe, of New-York, in 1794. The disease was seated in the lower as well as the upper jaw, and occasionally, as in the case of Mr. Bosworth, related by Mr. Leigh Thomas,† embraced all the three branches of the fifth pair of nerves. Previously to this affection of the face and head Mr. Apthorpe had suffered many years from regular gout.

In this case, the neuralgic affection was probably induced by the same cause, as the gout was totally suspended upon the appearance of the latter disease: Mr. Apthorpe had then passed the 60th year of his age.

In three other cases the disease occurred in females between 30 and 40 years of age; in all three the nervous temperament was strongly marked and predisposed them to the complaint; in one the ophthalmic branch of the fifth pair of nerves was exclusively the seat of the disease, each paroxysm being attended with violent action of the muscles of the eye, a compression of that organ and a copious discharge of tears; this lady for several years previous to this affection, had suffered repeated attacks of acute rheumatism, which never recurred after the appearance of her new complaint.

In the second, the nerves extending over the side of the head, as in hemicrania, were the seat of the disease. In the

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* Vol. 3. p. 14.

† The very interesting case of Mr. Bosworth the reader will find recorded by Dr. Darwin, in which all the three branches of the fifth pair and the several branches of the auditory nerve were successively divided before the patient obtained relief. See Zoonomia, 3d edit. Lond. vol. 3. p. 218.

third, it commenced in the fifth pair, but soon involved the whole nervous system, producing convulsions, to subdue which required the most liberal use of opium and æther. In all of these cases the patients suffered repeated returns of the disease, especially in the fall, winter, and spring; but by the use of tonic medicines, exercise, the cold bath and attention to diet and mode of life, at the same time avoiding exposure to the changes of the weather, they have for some years past escaped the usual visitations of this distressing malady.

Another lady far advanced in life, in consequence of an injury of the extremity of the fore finger of the right hand, has endured for several years the most severe paroxysms of this complaint, not only affecting the branch of the injured nerve, but those distributed upon the fore arm, and occasionally extending to those of the neck. In August we were called upon to visit Mrs. S—— aged about 52; she was confined to her room by an attack of neuralgia seated in the fourth toe of the left foot. She was first affected with this disease about three years since; but knows no cause to which she can ascribe it. She has made use of blood-letting, opium, warm bathing, and fomentations without effect; and upon one occasion the pain was so acute that she plunged the part affected in boiling water, but without relief. We directed the toe to be involved in a blister, which was continued to the part twenty-four hours, but this like the other means that had been resorted to, was of no avail. As there is a manifest resemblance between the severe pain frequently suffered in acute rheumatism, and that of neuralgia, it occurred to the writer that benefit might be obtained by the use of the volatile tincture of guaiac: a teaspoonful of this medicine was accordingly directed to be taken every two hours in half a glass of wine. After taking a few doses the patient experienced more relief than from

any other medicine she had taken. Since that time, whenever she has the least irritation in the affected part she has immediate recourse to the tincture, and uniformly with relief.

In the Medical Museum of Philadelphia,* Doctor Gardiner Jones, a physician of New-York, in two letters addressed to Dr. Rush, has published a very minute account of his sufferings from this disease, which was seated in the nerves of the face, and attended with the ordinary symptoms. In those communications, Dr. Jones remarks "that of all the physicians of this city with whom he had conversed, but one professed ever to have seen a case of the disease prior to his own." "That he could not recollect more than one or two who could recognise its singular features as described in any author they had read." "That to most practitioners even those of eminence, the name itself was a perfect novelty;" but adds "that the singularity of his case has made so much talk and noise in this city, that both the name and symptoms are familiar to every physician of any respectability, and almost as much so to the citizens in general."

After such statement, Dr. Jackson, of Boston,† may well observe "that it is not a little remarkable that the disease seems to have been quite unknown in the city of New-York previous to the case referred to."

From the cases now related by the writer of this article, it will be found that without arrogating to himself any greater respectability or eminence than those physicians whom Dr. Jones consulted, that he has long been conversant with

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* Vol. 7. p. 70.

† See his excellent paper on this subject in the New-England Journal of Medicine and Surgery, vol. 2. p. 105.

the complaint in question, and he can add in behalf of some other physicians of this city, and those not a few, that they have been no less familiarly acquainted with this *novel* affection of the nervous system, as it appeared to Dr. Jones and those to whom he applied for relief.

From these facts it also appears that neuralgia is not confined to the nerves of the face as most physicians have supposed; but that it is frequently connected with the general condition of the nervous system and that we are not in all instances to rely upon the division of the nerve affected for the cure, but to direct our remedies according to the temperament of the patient, the peculiar condition of body and vice of the habit from whence the disease may have originated. Dr. J. Fothergill has in some instances traced it to a cancerous or vitiated habit of body and in three cases has removed the disease by the use of hemlock: some French physicians have cured it by mercury,* believing that in some cases it may have arisen from a syphilitic taint; others treating it as rheumatism, have employed calomel and opium with success.† As the complaint for the most part occurs late in life, and in females most generally after the natural cessation of the menses, or, if in early life, from the suppression of the evacuation, may it not also derive its origin from the state of the blood-vessels, an arthritic humour, or that condition of body which induces rheumatism,‡ especially in persons of the nervous temperament, who are generally the subjects of neuralgia? In cases of

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* See Recueil periodique de Medicine, Paris, 1788, tom. iv. See also Edin. Med. and Surg. Journal. vol. 3. p. 273.

† Edin. Med and Surg. Journal, vol. 4. p. 306.

‡ See two cases thus induced related by Dr. Pearson, Edin. Med. and Surg. Journal, vol. 3. p. 272.

this nature, the lancet, warm bathing, alterative drinks, and the volatile tincture of guaiac, with other means calculated to operate upon the whole system, may, according to the peculiar circumstances of the case, take the place of the knife now resorted to for the division of the nerve affected, and which, in some instances, disappoints both the patient and practitioner.

University of Pennsylvania.

Dr. Barton, late Professor of Botany and Materia Medica in the University of Pennsylvania, has been elected Professor of the Institutes and Practice of Physic and Clinical Medicine in the place of the late Dr. Rush. Dr. Chapman, lecturer on Midwifery, &c. has been elected to the professorship of Materia Medica.

RECENT BRITISH PUBLICATIONS.

Pinkerton, the geographer, has just published a work, entitled, Petralogy, or a treatise on Rocks, enriched with numerous engravings, in 2 vols. 8vo.

The third volume of the Medico-Chirurgical Transactions has appeared.

N. C. Pitta, M. D. has published a treatise on the influence of Climate on the Human Species; and on the Varieties of Man resulting from it: including an account of the Criteria of intelligence, which the form of the head presents, and a sketch of a rational system of Physiognomy as founded on Physiology. 8vo.

Dr. Thompson, the author of the system of Chemistry, has just published the History of the Royal Society, in quarto.

Professor Playfair has published the heads of his Lectures, delivered at the University of Edinburgh, under the title of Outlines of Natural History, in 8vo.

A Practical Treatise on the Morbid Sensibility of the Eye, commonly called weakness of sight, has appeared, composed by John Stevenson, of the Royal College of Surgeons, London, 8vo.

The General Zoology of Dr. Shaw has arrived at the 8th volume, being the 2d volume on Birds.

The eleventh volume of the Transactions of the Royal Irish Society has lately appeared. Quarto.

Dr. John Thompson has recently published The Edinburgh New Dispensatory, containing the elements of Materia Medica and Pharmacy, in one vol. 8vo.

Dr. Munro, jun. F. R. S. has completed in one volume large octavo, the Morbid Anatomy of the Human Gullet, Stomach, and Intestines.

The first fasciculus of the Morbid Anatomy of the Liver, by Dr. Farre, has made its appearance in 4to. with superior coloured engravings.

RECENT AMERICAN PUBLICATIONS.

An Eulogium upon Benjamin Rush, M. D. Professor of the Institutes and Practice of Medicine, and of Clinical Practice in the University of Pennsylvania, who departed this life April 19th, 1813, in the 69th year of his age. By David Ramsay, M. D. member of the South-Carolina Medical Society. Philadelphia. Bradford & Inskeep, 8vo.

Medical Papers communicated to the Massachusetts Medical Society. Part III. vol. II. completing the second volume published by the Society. Boston. Wait, 8vo.

A View of the Mercurial Practice in Febrile Diseases. By John Warren, M. D. President of the Massachusetts Medical Society and Professor of Anatomy and Surgery in the University of Cambridge. Boston. Wait, 8vo.

The American New Dispensatory. Second Edition, greatly enlarged and improved. By James Thacher, M. D. Fellow of the Massachusetts Medical Society, of the American Academy of Arts and Sciences, and Honorary Member of the Georgia Medical Society. Boston. Wait, 8vo.

Memoirs of the Columbian Chemical Society. Philadelphia, 8vo.

The New-England Journal of Medicine and Surgery and the Collateral Branches of Science. Conducted by a Number of Physicians. No. III. vol. II. Boston, Bradford & Read, 8vo.

The Eclectic Repertory and Analytical Review, Medical and Philosophical. Edited by a Society of Physicians. No. IV. vol. III. Philadelphia. Dobson.

The Emporium of Arts and Sciences, (New Series,) vol. I. No. II. for August, 1813. Conducted by Thomas Cooper, Esq. Professor of Chemistry, Mineralogy, &c. in Dickinson College, Carlisle, Penn. Philadelphia. Kimber and Richardson, 8vo.

An Historical Sketch of the Origin, Progress, and Present State of the College of Physicians and Surgeons of the University of the State of New-York, (with a view of the College.) New-York. C. S. Van Winkle, 8vo.

Observations on Vision. By David Hosack, M. D. F. L. S. Read before the Royal Society of London, May 1st, 1794, and published in their Transactions of the same year. Communicated to the Society by George Pearson, M. D. F. R. S. &c. New-York. Van Winkle, 8vo.

A Gazetteer of the State of New-York; carefully written from original and authentic materials. Arranged on a new plan. In three parts. By Horatio Gates Spafford, A. M. author of a Geography of the United States, Member of the New-York Historical Society, and Corresponding Secretary of the Society of Arts. Albany. H. Southwick, 8vo.

OBITUARY.

Died, at Philadelphia, on the 23d of August last, after a short illness, Alexander Wilson, Esq. author of the American Ornithology, and other literary works.

TO CORRESPONDENTS.

Several original Papers, and a Review of Dr. Thacher's New Dispensatory and of Dr. Warren's work on Mercurial Practice, are postponed until our next.

THE

AMERICAN MEDICAL AND PHILOSOPHICAL REGISTER.

JANUARY, 1814.

ORIGINAL COMMUNICATIONS.

I.

A DISCOURSE, *introductory to a Course of Lectures on the Theory and Practice of Physic; containing, Observations on the Inductive System of prosecuting Medical Inquiries, and a Tribute to the Memory of the late Dr. Benjamin Rush; delivered at the College of Physicians and Surgeons, on the 3d of November, 1813. By* DAVID HOSACK, M. D. F. L. S. *Professor of the Theory and Practice of Physic and Clinical Medicine in the University of the State of New-York.*

GENTLEMEN,

AMIDST the numerous improvements which have recently taken place in the literary establishments of the city and state of New-York, the institution of a College of Physicians and Surgeons, exclusively devoted to the great purposes of medical education, is certainly an event deserving the highest commendation. It reflects equal honour upon its founders, the Regents of the University, and upon the Legislature, from whom it has received its first endowment and patronage.

This institution was first projected, and a law passed, authorizing the Regents of the University to carry it into effect, as early as 1791; but motives of respect to the Trustees of Columbia College, who had annexed a medical school to that seminary of learning, prevented the Regents from carrying the views of the Legislature into operation until 1807, when a charter was first granted for that purpose.

The exercise of the power delegated to the Regents by the act of the Legislature referred to, has afforded just cause of congratulation to the friends of science, as an event, of all others, calculated to advance the usefulness and respectability of the medical profession, the celebrity of the state, and the honour of our country. That the high expectations which were entertained of the benefits that would flow to the community from its establishment were well founded, the history of the College, even during the short period it has been in operation, abundantly testifies: for, during the six sessions that have elapsed, nearly four hundred gentlemen have received the benefits of instruction afforded at this establishment, and of that number about forty have been admitted to the honours of graduation.

But the Regents of the University, as well as the members of the profession in general, have ever been duly sensible of the benefits that would result from an union of the Professors of this College with those constituting the Faculty of Physic of Columbia College. Impressed with the importance of such union, the Regents of the University, in the winter of 1811, respectfully solicited the friendly offices of the Board of Trustees of Columbia College in combining the two medical institutions. This event, so desirable in itself, and which promises to be productive of signal and permanent advantages to the profession and the community, has at length been happily accomplished.

Permit me, gentlemen, students of medicine, to offer you my congratulations upon the favourable auspices under which the present session of this College commences: for to you it must prove peculiarly beneficial; as in no other part of the United States can you obtain so extensive a system of medical education as that now afforded by this university. But the establishment of this College, and the ultimate union of the Medical Schools of New-York, constitute an important era in the history of our state; and may I not add, in the history of medical science? For what advantages and improvements may we not reasonably anticipate from the united labours of those who now occupy the several professorships of this College, and of the numerous pupils who may be expected hereafter to resort to this city for instruction?

New-York, in her commercial and agricultural character, has long been distinguished. In these respects, she has justly been considered one of the most important states of the union; but when we take into view the immense provision she has made for common schools; the extensive pecuniary contributions made to her numerous academies; the appropriations granted to her different colleges; the incorporation of new literary societies in different parts of her extensive territory; the acts lately passed for the promotion of medical science; the incorporation of state and county medical societies; the liberal provision made for that invaluable charity and practical school of medicine, the New-York Hospital; and the establishment and endowment of the Institution in which we are now convened, it must be admitted that her pre-eminence is not confined to her population, her commerce, or her agriculture, but that she is equally distinguished for her protection and cultivation of the arts and sciences, and shortly must combine every advantage that the most favoured states of the union may have individually enjoyed.

My anticipations lead me still further: When peace may be restored, and the benefits of commercial and literary intercourse with the old world be again experienced by this western hemisphere, but a few years can elapse when the universities of New-York, of Pennsylvania, of Massachusetts, of Connecticut, and of Maryland, will hold an honourable competition with the most distinguished seats of learning that now adorn the European continent.

In the profession of medicine it may already be said, that in the United States we possess all the necessary resources for the most finished system of education that can be obtained in any part of the world, not excepting the justly celebrated medical schools of Edinburgh, London, or Paris.

In anatomy, physiology, the principles and practice of surgery, midwifery, the materia medica, chemistry, botany, mineralogy, and other branches of natural history, we have the most abundant means of instruction both practical and theoretical. And in the study of the theory and practice of physic, in acquiring a knowledge of the diseases of our country, we enjoy advantages, which, to the American pupil, are superior to those of any of the schools of the old world: for such is the influence of soil, climate, vicissitudes of season, and the state of society, upon acute diseases, that in this country they exhibit in many respects a character different from those of Great Britain or of the continent of Europe. Hence it happens, that the American physician, who may have had all the advantages of a foreign course of study, who may have enjoyed all the benefits of instruction which the infirmary of Edinburgh or the hospitals of London or Paris afford, if he has not previously acquired a knowledge of the febrile and other acute diseases of this climate, upon his return to his native country has still the most important practical lessons to learn, and which experience alone can supply. In this respect, you have advantages at home which you cannot obtain

abroad; nay, more, although we have been indebted to Europe for most of the knowledge we possess in the healing art, the European physician has still much to receive in return: he has yet to learn the history of the febrile and other diseases of this country; the varieties they exhibit; the effect of peculiarities of constitution and climate; the causes which produce them, and the various modes of treatment they severally require, before he can attain to those principles which are necessary to constitute a system of practice. For it is justly remarked by an eminent medical writer,* that "no system of medicine can be perfect, while there exists a single disease which we do not know, or cannot cure." There cannot, therefore, be a complete system of medicine until our country has furnished the description and the cure for all its peculiar diseases.

American genius has already largely contributed to the improvement of the arts, and has done much in developing the principles of civil government. For you and your successors, probably, is also reserved the discovery of those principles in medicine which are necessary to complete the fabric that has been begun by a Sydenham, a Boerhaave, a Hoffman, a Cullen, and other celebrated physicians of Europe. Cherish, then, the feelings which this prospective view excites, and let your exertions correspond with the obligation it imposes.

The Practice of Physic, which, in connexion with Clinical Medicine, it is my province to teach in this University, is very properly defined, by a great systematic writer, to be the art of discerning, distinguishing, preventing, and curing diseases. The discernment of a dis-

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* Dr. Rush.

ease, as Dr. Cullen very properly denominates it, is only to be acquired by long and habitual observation at the bedside of the sick, for it frequently happens, that not only the symptoms, but the causes of disease, are so concealed, that they escape the observation both of the patient and the bystander ; and, even by the physician, are only to be discovered by habitual attention to the phenomena of health as well as the symptoms of disease. But this discernment admits of still more extensive application, as it presents to the mind those circumstances attendant upon diseases, which no language can define. For although books of practice, and systems of nosology may furnish the description of the symptoms of disease, and faithfully delineate the more *prominent* features by which they are characterized, there are certain nicer shades of discrimination, which frequent converse with the sick can alone detect : for diseases, like plants and animals, have their peculiarities of character, which no system of nosology will supply, no description, however voluminous or minute, can impart, which no medical Lavater has yet delineated, and with which practice alone can make us acquainted.

It is only the practical botanist who can distinguish plants which have a close resemblance. The eye of the practical physician, in like manner, when quickened by habit, readily distinguishes one form of fever from another, but which are all confounded in the eyes of the hasty observer, or of him whose preconceived notions have interposed a medium which obscures his vision. But this knowledge of the symptoms of disease is not sufficient to lead us to their prevention and cure. Whatever may be the readiness with which diseases may be perceived, or however minute may be our acquaintance with the varied phenomena they exhibit, it is only the knowledge of the various causes by which they are produced, and of the structure of the system upon which they operate, that can direct us to a safe and judicious practice ; for, from

these sources alone, the great principles upon which the treatment of disease is to be conducted must be derived.

These causes are of three kinds: such as are generally inherent in our frame, and predispose the system to be acted upon; those which are the most immediate, and for the most part external agents in exciting disease; and lastly, the proximate cause, which denotes the condition of the part affected, or of the whole system, and upon the change or removal of which the corresponding changes or removal of the disease depends. To use the elegant language of Dr. Gregory, that ornament of our profession and of classical literature, "causa proxima est, quæ presens, morbum facit, sublata tollit, mutata mutat."*

The theory of physic, therefore, may be defined to be, that system of principles which is deduced from a knowledge of the human structure, and of the predisposing, exciting, and proximate causes of disease, and by which the practice of medicine is to be directed. By many, however, the term theory has been abused, by considering it as synonymous with every hypothesis that has been promulgated for the purpose of explaining the phenomena of diseases, and with which medicine, like every other branch of philosophy, has in all ages been corrupted. The question then presents itself, by what process are we to attain to those principles so necessary as subservient to practice? I answer, by *accurate observation, judicious experiment,* and *cautious induction from the facts which they present.* These are the sources whence was deduced that luminous system of philosophical investigation introduced into physics by Lord Bacon, Robert Boyle, and Sir Isaac Newton. They are the same sources whence those celebrated metaphysicians, Reid, Gerard, Campbell, and Stewart, have drawn those principles which

* Conspectus Medicinæ.

have recently been applied, with so much success, in explaining the phenomena of mind. And from the same sources, as exemplified in the pages of Hippocrates, Sydenham, and Boerhaave, are to be derived those principles in medicine which can alone conduct us to a judicious and successful practice. Suffer me to arrest your attention in the contemplation of those distinguished benefactors to medical science.

Anterior to the days of Hippocrates, we have no traces of any thing like theory or principles in medicine, much less a regular system of practice. On the contrary, before his time, the only medical knowledge which existed, was the result of random experience, or accidental observation, of the effects of remedies in particular diseases; totally uninfluenced by principles derived from the structure of the human frame, the symptoms of disease, or the causes which produced them. The practice of that day was, consequently, purely empirical, in the strict etymological sense of the term; but it is to be observed, that at that early period of society, the diseases of mankind were few in number when compared with those which intemperance, luxury, and what are called the refinements of civilized life, have since introduced.

Hippocrates was the first physician, of whom we have any record, who attempted to deduce from the facts which were presented to him, certain principles upon which to conduct the cure of diseases. He, therefore, first united the theory with the practice of physic; but it was not that speculative theory which proceeds from hypothesis to facts, but from facts to principles. Hippocrates was in medicine what Lord Bacon was in philosophy: he first pointed out the true road to correct knowledge in our art. Permit me to devote a few moments to this grateful theme, while I endeavour to rescue his venerable name from the imputations which have been cast upon it, even by Lord Verulam himself, and who, it is more than to be suspected, drew from the works of Hip-

pocrates, with which he was intimately acquainted,* that very system of investigation which characterizes the Novum Organum, but which no less distinguishes the writings of our great progenitor

Hippocrates was born in the island of Cos, about four hundred years before Christ. At that memorable period of Grecian splendour, in which Apelles, Praxiteles, and Demosthenes, adorned the several arts of painting, sculpture and eloquence, Hippocrates was not less distinguished for his improvement in the healing art, and for which he received not only a crown of gold, but the highest honours Athens could bestow. Having applied himself with indefatigable industry to the various branches of human learning, then most generally taught; having become a proficient in the philosophy of the schools of Cnidus and of Cos, and afterwards added to his stock of knowledge by travel; with a mind thus enriched, and a bodily frame no less vigorous than his mind, (for it sustained him upwards of an hundred years) he entered upon the practice of physic.

Here his talents appear eminently great. The same system of inductive reasoning, which was afterwards adopted by Lord Bacon, was no less the guide of Hippocrates. For it was the maxim of the latter, as of the former, that every principle should be founded upon the firm basis of observation and experience, and that the only correct mode of reasoning is that which proceeds from the effects to the causes which produce them. With this view he not only availed himself of that mass of facts which the temples of Greece supplied,† but he patiently sat down at the bedsides of the sick, recorded every successive symptom of disease,

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* Bacon on the Advancement of Learning, book II. See his works, vol. I. p. 122, &c. Lond. Ed. 1803.

† Vide Coacæ prænotio. Lib. Prænotion. I. Prædict. 11.

the changes it underwent, as well as the manner of its termination, whether in the dissolution or the recovery of his patient. Although he was unacquainted with the circulation of the blood, or the value of the pulse as the index of disease, he carefully attended to every change in the *respiration* of his patient, which led him to conclusions equally correct; nor was he less attentive to the various secretions of the system, both in the healthy and in the morbid state. Indeed, so minute is the description which he gives of the various appearances the secretion from the lungs undergoes in the different stages of pneumonic inflammation, that to him alone are we yet, at this very day, indebted, not only for the best, but I do not hesitate to say, the only correct and satisfactory description that has been given of that disease. Although totally unacquainted with the nature of the materials constantly emanating from the surface of the body in perspiration, and which is but of recent discovery, he well knew the importance of that function, both in health and disease. But the observations of Hippocrates were not confined to the human body, and to the phenomena it presents in the morbid state: the action of every external agent no less attracted his observant eye. The air he breathed, the water he drank, the earth he trod upon, alike became the subjects of his attention, as far as they were supposed to exert an influence upon our system.* Nor were these the limits of his observation: The movements of the heavenly bodies; their influence upon our planet and upon our frame, were also embraced in his extended view.† From data such as these, and from a long and extensive experience, he founded and built up a system of pure and rational philosophy. As the great object of all his labours was to arrive at truth, and as Bacon

* Hippoc. de Morb. Epidem. Lib. 1, 2, 3, &c. et de Aere, Aquis, et Locis.
† Vide Lib. citat. et in aphorism. Sect. 3, 4.

discarded the logical definitions and distinctions of Aristotle, so did Hippocrates reject the principal hypothesis of Pythagoras and the other mysterious dogmata of the sophists of his age. Governed by the true spirit of what has lately received the appellation of Newtonian philosophy, he admitted so much only as enabled him to reason more justly in investigating the causes, and in discovering the method of cure in diseases. As the philosophy of Bacon differed from the fashionable logic, or syllogistic form of demonstration, which, until his time, was almost universally received; equally great was the difference between the method of Hippocrates and that of his predecessors.

But while we offer the tribute due to this great philosopher and physician, it is not to be denied that his knowledge of the internal structure of the human frame was necessarily limited, and, in many respects, erroneous. But although, as has already been intimated, he was ignorant of the circulation of the blood; although he confounded an artery with a vein, and a nerve with a tendon, he effected, even in his own time, more real improvements in the healing art than all his predecessors had done in the space of two thousand years before him; and, we may add, more than all his successors did in two thousand years after him. But although he lived in the infancy of medicine, his works, like those standards of perfection, the columns of Grecian architecture, will ever remain the admiration of the world, and the best models for our imitation. "His fame," to employ the language of an able and eloquent writer,* "like a stupendous and solitary mountain, seems to have acquired new height by the wasting effects of time upon the adjacent country."

After the death of Hippocrates, little was done to complete the building of that fabric of which he had laid the founda-

* Dr. Rush.

tion. But while the example which he sat was imitated, and the road he pointed out was followed, though with unequal steps, there was still a gradual but a sensible augmentation to the stock of medical knowledge. Hippocrates was succeeded by Plato and Aristotle, who concurred, though in different ways, to check the progress of medicine for many centuries. They corrupted almost every branch of human learning. In the room of the Hippocratic method of induction, were now substituted captious disputations and syllogistic quibbles.—The mode of reasoning which they adopted, though it afforded some aid in the detection of sophistry, gave little assistance in the investigation and discovery of truth. In short, instead of having recourse to observation and experiments, they multiplied hypothetical propositions, confounded realities with fictions, preferred words to things: in the language of Lord Bolingbroke, "they invented systems more baneful to truth and real learning, than the ravages of the Goths and Vandals."

But the circumstance, which of all others, gave currency to the Aristotelian doctrines in medicine, was their adoption by Galen, a man of great learning, little inferior to Aristotle himself in genius, and an ardent admirer of his peculiar talents. He laboured with great zeal to complete and offer to the world a new theory in medical science. His fertile imagination supplied the place of facts, and as he infused into all his writings the subtle distinctions and metaphysical notions of Aristotle, he so far corrupted, more than any other writer in medicine, the true spirit of philosophical investigation. Yet it deserves to be remembered, and to the immortal honour of Hippocrates, that Galen himself was aware, that the *practice* of Hippocrates was the most just and rational, and that he himself pursued it in the treatment of diseases. What progress the doctrines of Galen made, and how long they were implicitly adopted, are facts too familiarly known

to require further mention on this occasion. But happily for mankind, and the interests of science, towards the conclusion of the sixteenth, and beginning of the seventeenth century, another galaxy of talents appeared that dissipated those clouds with which the Aristotelian philosophy had enveloped the world, and which both philosophers and physicians, Ixion-like, had embraced for nearly fourteen hundred years: You will anticipate me in the names of Bacon, Boyle, Galileo, Locke, and Newton. It was not until this period that philosophers and physicians "emancipated themselves from their vassalage to Aristotle and Galen." It was not until this period that the human mind again recovered its freedom and dignity, and genuine science began to develope what had remained involved in the deepest obscurity. To commence this illustrious work was reserved for Lord Bacon, a man in every respect qualified for so great an undertaking. By the publication of his Instauration of the Sciences, he *rescued reason and truth* from the slavery in which they so long had been held; he effected a total revolution in the empire of science, and laid the foundation of the inductive system of philosophizing, or rather, as we have already attempted to show, he revived the Hippocratic mode of acquiring knowpledge.

Nearly cotemporary with those distinguished characters was Thomas Sydenham. As he possessed a strength of understanding, an accuracy of discernment, and an ardour of curiosity no less rare than desirable, he soon perceived the absurdity and pernicious effects of the visionary theories which had preceded. He accordingly devoted the most indefatigable attention to the study of nature, and what he considered of nearly the same importance, the aphorisms and other writings of Hippocrates. He caught the true spirit of philosophy which they inculcate, and was the first in medicine, after the revival of learning, who adopted the inductive me-

thod of Bacon, and enforced the plan of study first pursued by the father of medicine. In his preface to his works he states, that we are to arrive at perfection in our science by two means: a faithful relation of the causes and symptoms of diseases, and from thence deducing and establishing their method of cure. Like his great prototype, he accurately noticed the phenomena and progress of diseases, and the manner of their termination, as well as the effects of medicine and diet, in their prevention and cure. He also, more minutely than any other writer, recorded the prevailing epidemics of each year; the influence of seasons, climate, and the sensible qualities of the atmosphere. Want of time, however, forbids that I should here enlarge upon his merits. But while I recommend to you a close and repeated examination of his writings, in order to enable you the better to appreciate them, I shall conclude this imperfect sketch of his character in the words of his celebrated successor: "He was the ornament of England, the Apollo of the art, whom I never consider but my mind presents me with the true picture of an Hippocratic physician, and to whom physic is so much indebted, that all I can say will fall far short of his merit."*

Let us now take a brief notice of another individual, to whom, next to Hippocrates and Sydenham, our profession is most indebted—the illustrious Boerhaave, who was no less eminent in medicine than Sir Isaac Newton in philosophy. Boerhaave flourished about forty years after Sydenham. I shall content myself with giving you some idea of the extent of the knowledge which he possessed, rather than of the manner in which he acquired it. He was well versed in the Latin, Greek, Hebrew, and other of the oriental languages, and also in those of modern Europe. He was a profound mathematician and algebraist, and a remarkable proficient in-

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* Boerhaave.

the philosophy both of mind and matter. He studied the works of Hippocrates, and all the Greek, Roman, and Arabian physicians, as well as those of the most eminent among the moderns. He was the advocate of experimental science, and was himself a distinguished practical anatomist and chemist. In botanical knowledge he was among the first of his age, and in his acquaintance with the various departments of the materia medica, exceeded by none. He thus furnishes the most striking example to show, that it is practicable for a single individual to excel in almost every branch of human learning. Of the numerous writers on medical science whom he studied, he particularly admired Hippocrates among the ancients, and Sydenham among the moderns. Upon his election to the professorship of medicine, in 1701, he pronounced an oration "de commendando studio Hippocratico," in which he not only recommended the writings of the Coan sage as among the most valuable sources of practical information, but particularly enforced the *Hippocratic mode* of conducting medical inquiries.

He delivered lectures on the theory and practice of medicine, botany and chemistry, with the greatest clearness, precision and eloquence; and had such a conflux of students, from all parts of the world for his hearers, as never, probably, had been presented before any professor. Upon the death of Le Mort, he was placed at the head of every branch of medicine, when the number of his students became so great, that, according to his biographer, Dr. Matty, Leyden itself was scarcely sufficient to accommodate them. In his Institutions of Medicine and his Aphorisms, which have been pronounced two of the most concise, yet comprehensive works which have ever been presented to the medical world, and which have been the text books of the universities of Europe for nearly a century, you will find the result of all that learning, experience and talents, for which he was so emi-

nently distinguished. But the great talents, the indefatigable application, and the extensive knowledge of Boerhaave held but a second place in his character: In the language of Dr. Johnson, "he was an admirable example of temperance, fortitude, humility, and devotion;" and we may add, christianity enrols his name among her firmest and steadiest supporters.

But, gentlemen, while we thus revere the great and good of the old world, let us do homage to merit in the new. While we acknowledge the benefits which the science of medicine has received from the physicians of Europe, let us not be unmindful of the debt of gratitude we owe to a native of our own soil, who was no less an ornament to human nature, than his various exertions have been precious to his profession, to science, and his country.

Your feelings, I trust, will be in unison with mine, while, in addition to the numerous offerings of public and private respect, which have been paid to the memory of Doctor Benjamin Rush, we devote a few moments to the contemplation of the professional attainments, the public services, the moral and religious character, which make up the portrait of that distinguished philosopher and physician.

Doctor Rush was born on the 24th of December, 1745, on his father's estate, about twelve miles from the city of Philadelphia. His ancestors followed William Penn from England to Pennsylvania, in the year 1683. They chiefly belonged to the society of Quakers, and were all, as well as his parents, distinguished for the industry, the virtue, and the piety, characteristic of their sect. His grandfather, James Rush, whose occupation was that of a gunsmith, resided on his estate near Philadelphia, and died in the year 1727. His son John, the father of Dr. Rush, inherited both his trade and his farm, and was equally distinguished for his industry and ingenuity. He died while his son Benjamin

was yet young, but left him to the care of an excellent and pious mother, who took an active interest in his education and welfare. In a letter which I had the pleasure to receive from Dr. Rush, a short time before his death, and which was written upon his return from a visit to the tomb of his ancestors, he thus expresses the obligation he felt for the early impressions of piety he had received from his parents:

"I have acquired and received nothing from the world which I prize so highly as the religious principles I inherited from them; and I possess nothing that I value so much as the innocence and purity of their characters."*

But this was not the only source of that virtue and religion for which he was so eminently distinguished. His mother, as if influenced with a presentiment of the future destinies of her son, resolved to give him the advantages of the best education which our country then afforded:—For this purpose he was sent, at the early age of eight or nine years, to the West Nottingham Grammar School, and placed under the care of his maternal uncle, the Rev. Doctor Samuel Finley, an excellent scholar and an eminent teacher, and whose talents and learning afterwards elevated him to the Presidency of the College of Princeton. At this school young Rush remained five years, for the purpose of acquiring a knowledge of the Greek and Latin languages, and other branches necessary to qualify him, as preparatory for a collegiate course of study. But under the tuition and guidance of Dr. Finley, he was not only instructed in classical literature;—he also acquired what was of no less importance, and which characterized him through life—a habit of study and observation, a reverence for the christian religion, and the habitual performance of the duties it incul-

* The letter here referred to was originally addressed, by Dr. Rush, to the Hon. John Adams, Esq. late President of the United States: from a copy of the same, sent to the author by Dr. Rush, several of the preceding interesting particulars have been taken.

cates. For his accomplished and pious instructor not only regarded the temporal, but the spiritual welfare of those committed to his care.

At the age of fourteen, after completing his course of classical studies, he was removed to the College of Princeton, then under the superintendance of President Davies, one of the most eloquent preachers and learned divines our country has produced.

At college, our pupil not only performed his duties with his usual attention and success, but he became distinguished for his talents, his uncommon progress in his studies, and especially for his eloquence in public speaking. For this latter acquirement, he was doubtless indebted to the example set before him by President Davies, whose talents as a pulpit orator were universally acknowledged, and were frequently the theme of his pupil's admiration.

Dr. Rush received the degree of bachelor of arts in the autumn of 1760, at the early age of fifteen. The next succeeding six years of his life were devoted to the study of medicine, under the direction of Dr. John Redman, at that time an eminent practitioner in the city of Philadelphia. Upon commencing the study of medicine, the writings of Hippocrates were among the very first works which attracted his attention; and, as an evidence of the early impression they made upon his mind, and of the attachment he had formed to them, let it be remembered, that Dr. Rush, when a student of medicine, translated the aphorisms of Hippocrates from the Greek into his vernacular tongue, in the seventeenth year of his age. From this early exercise he probably derived that talent of investigation, that spirit of inquiry, and those extensive views of the nature and causes of disease, which give value to his writings, and have added important benefits to the science of medicine. The same mode of acquiring knowledge which was recommended by

Mr. Locke, and the very manner of his commonplace book was also early adopted by Dr. Rush, and was daily continued to the last of his life. To his records, made in 1762, we are at this day indebted for many important facts illustrative of the yellow fever, which prevailed in, and desolated the city of Philadelphia, in that memorable year. Even in reading, it was the practice of Dr. Rush, and for which he was first indebted to his friend Dr. Franklin, to mark with a pen or pencil, any important fact, or any peculiar expression, remarkable either for its strength or its elegance. Like Gibbon, "he investigated with his pen always in his hand;"—believing with an ancient classic, that to study without a pen is to dream—"Studium sine calamo somnium."

Having with great fidelity completed his course of medical studies under Dr. Redman, he embarked for Europe, and passed two years at the University of Edinburgh, attending the lectures of those celebrated professors, Dr. Monro, Dr. Gregory, Dr. Cullen, and Dr. Black.

In the spring of 1768, after defending an inaugural dissertation "de coctione ciborum in ventriculo," he received the degree of doctor of medicine. In that exercise, which was written with classical purity and elegance, it was the object of Dr. Rush to illustrate, by experiment, an opinion that had been expressed by Dr. Cullen, that the aliment, in a few hours after being received into the stomach, undergoes the acetous fermentation. This fact he established by three different experiments, made upon himself; experiments, which a mind less ardent in the pursuit of truth, would readily have declined.

From Edinburgh Dr. Rush proceeded to London, where, in attendance upon the hospitals of that city, the lectures of its celebrated teachers, and the society of the learned, he made many accessions to the stock of knowledge he had already acquired.

In the spring of 1769, after visiting Paris, he returned to his native country, and immediately commenced the practice of physic in the city of Philadelphia, in which he soon became eminently distinguished.

Few men have entered the profession in any age or country with more numerous qualifications as a physician, than those possessed by Dr. Rush. His gentleness of manner, his sympathy with the distressed, his kindness to the poor, his varied and extensive erudition, his professional acquirements, and his faithful attention to the sick, all united in procuring for him the esteem, the respect, and the confidence of his fellow citizens, and thereby introducing him to an extensive and lucrative practice.

It is observed, as an evidence of the diligence and fidelity with which Dr. Rush devoted himself to his medical studies, during the six years he had been the pupil of Dr. Redman, that he absented himself from his business but two days in the whole of that period of time. I believe it may also be said, that from the time he commenced the practice of medicine to the termination of his long and valuable life, except when confined by sickness, or occupied by business of a public nature, he never absented himself from the city of Philadelphia, nor omitted the performance of his professional duties a single day. It is also stated, that during the thirty years of his attendance as a physician to the Pennsylvania hospital, such was his punctuality, his love of order, and his sense of duty, that he not only made his daily visit to that institution, but was never absent ten minutes after the appointed hour of prescribing.

In a few months after his establishment in Philadelphia, Dr. Rush was elected a professor in the medical school which had then been recently established by the laudable exertions of Dr. Shippen, Dr. Kuhn, Dr. Morgan, and Dr. Bond. For this station his talents and education peculiarly qualified him.

As in the case of Boerhaave, such too had been the attention bestowed by Doctor Rush upon every branch of medicine, that he was equally prepared to fill any department in which his services might be required.

The professorships of anatomy, the theory and practice of physic, clinical medicine, and the materia medica, being already occupied, he was placed in the chair of chemistry, which he filled in such manner as immediately to attract the attention of all who heard him, not only to the branch he taught, but to the learning, the abilities, and eloquence, of the teacher.

In the year 1789 Dr. Rush was elected the successor of Dr. Morgan to the chair of the theory and practice of physic. In 1791, upon an union being effected between the college of Philadelphia and the university of Pennsylvania, he was appointed to the professorship of the institutes of medicine and clinical practice; and in 1805, upon the resignation of the learned and venerable Dr. Kuhn, he was chosen to the united professorships of the theory and practice of physic and of clinical medicine, which he held the remainder of his life. To the success with which these several branches of medicine were taught by Dr. Rush, the popularity of his lectures, the yearly increase of the number of his pupils, the unexampled growth of the medical school of Philadelphia, and the consequent diffusion of medical learning, bear ample testimony; for, with all due respect to the distinguished talents with which the other professorships of that university have hitherto been, and still continue to be filled, it will be admitted, that to the learning, the abilities, and the eloquence of Dr. Rush, it owes much of that celebrity and elevation to which it has attained. What Boerhaave was to the medical school of Leyden, or Dr. Cullen to that of Edinburgh, Dr. Rush was to the university of Pennsylvania.

But Dr. Rush did not confine his attention and pursuits either to the practice of medicine or to the duties of his professorship: his ardent mind did not permit him to be an inactive spectator of those important public events which occurred in the early period of his life.

The American revolution; the independence of his country; the establishment of a new constitution of government for the United States, and the amelioration of the constitution of his own particular state, all successively interested his feelings, and induced him to take an active concern in the scenes that were passing. He held a seat in the celebrated congress of 1776 as a representative of the state of Pennsylvania, and subscribed the ever memorable instrument of American independence. In 1777, he was appointed physician general of the military hospital for the middle department; and in the year 1787 he received the additional gratification and evidence of his country's confidence in his talents, his integrity, and his patriotism, by being chosen a member of the state convention for the adoption of the federal constitution.

These great events being accomplished, Dr. Rush gradually retired from political life, resolved to dedicate the remainder of his days to the practice of his profession, the performance of his collegiate duties, and the publication of those doctrines and principles in medicine which he considered calculated to advance the interests of his favourite science, or to diminish the evils of human life. In a letter which I received from him as early as the year 1794, he expresses this determination, adding, "I have lately become a mere spectator of all public events." And in a conversation on this subject, during the two last years of his life, he expressed to me the high gratification which he enjoyed in his medical studies and pursuits, and his regret that he had not at a much earlier period withdrawn his attention from all other subjects and bestowed it enclusively upon his profession.

Young gentlemen, let this declaration of that venerable character, who, like Hippocrates of old, well knew the extent of his art, and the comparative shortness of human life, impress your minds with the duties before you; let it teach you, too, the value of time, that it may not be occupied in those pursuits which are unconnected with science or your profession; and, especially, that it be not wasted in idle and unprofitable amusements; for, of the physician it is not enough to say,

"That here he liv'd, or here expired."

POPE.

Such was the attachment of Dr. Rush to his profession, that speaking of his approaching dissolution, he remarks, "when that time shall come, I shall relinquish many attractions to life, and among them a pleasure which to me has no equal in human pursuits; I mean that which I derive from studying, teaching, and practising medicine." But he loved it as a science; principles in medicine were the great objects of all his inquiries. He has well observed, that medicine without principles, is an humble art, and a degrading occupation; but directed by principles, the only sure guide to a safe and successful practice—it imparts the highest elevation to the intellectual and moral character of man.

But the high professional character and attainments of Doctor Rush, did not alone display themselves in his skill as a physician, or his abilities as a teacher; he was equally distinguished as a writer and an author.

The present occasion does not allow me to recite to you even the numerous subjects of his medical publications;* much less does it afford an opportunity to review the opinions

* For an ample and minute account of the writings of Dr. Rush, the reader is particularly referred to the excellent and instructive discourse delivered before the Medical Society of Charleston, by the Hon. David Ramsay, M. D.

they contain. In the ensuing course of lectures these will severally fall under our attention, as the various subjects to which they relate may present themselves. Permit me, however, generally to observe, that the numerous facts and principles which the writings of Dr. Rush contain, the doctrines they inculcate relative to the nature and causes of disease, and the improvements they have introduced into the practice of medicine, recommend them to your attentive perusal and study, while the perspicuity and elegance of the style in which they are written, give them an additional claim to your attention as among the finest models of composition. The same remarks are equally applicable to the epistolary stile of Dr. Rush and that of his conversation; in both of which he eminently excelled.

Mr. Fox declared in the British House of Commons, that he had learned more from Mr. Burke's conversation than from all the books he had ever read. It may also be observed of the conversation of Dr. Rush, that such were the riches of his mind; such was the active employment of all its faculties; so constant was his habit of giving expression to his thoughts in an extensive correspondence, in the preparation of his public discourses, and in his daily intercourse with the world, that few persons ever left his society without receiving instruction, and expressing their astonishment at the perpetual stream of eloquence in which his thoughts were communicated.

It has frequently been the subject of surprise, that amidst the numerous avocations of Dr. Rush, as a practitioner and a teacher of medicine, that he found leisure for the composition and the publication of the numerous medical and literary works which have been the production of his pen.

Although Dr. Rush possessed by nature an active and discriminating mind, in which were blended great quickness of perception, and a retentive memory; although he en-

joyed the benefits of an excellent preliminary and professional education, it was only by habits of uncommon industry, punctuality in the performance of all his engagements, the strictest temperance and regularity in his mode of life, that enabled him to accomplish so much in his profession, and to contribute so largely to the medical literature of his country. Dr. Rush, like most men who have extended the boundaries of any department of human knowledge; who have contributed to the improvement of any art or science, was in habits of early rising, by which he always secured what Gibbon has well denominated "*the sacred portion of the day.*"

The great moralist* justly observes, that "to temperance every day is bright, and every hour is propitious to diligence." The extreme temperance of Dr. Rush, in like manner, enabled him to keep his mind in continual employment, thereby "setting at defiance the morning mist and the evening damp—the blasts of the east, and the clouds of the south."† He knew not that "lethargy of indolence" that follows the inordinate gratifications of the table. His ciesto did not consist in indulgence upon the bed or in the armed chair, to recover those powers which had been paralysed or suspended by an excessive meal, or the intemperate use of vinous or spirituous drinks.

Dr. Johnson, during his tour to the Hebrides, when fatigued by his journey, retired to his chamber and wrote his celebrated Latin ode addressed to Mrs. Thrale.‡ Dr. Rush, in like manner, after the fatigues of professional duty, refreshed his mind by the perusal of some favourite poet, some work of taste, some volume of travels, biography, or history. These were the pillows on which he sought repose.

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* Dr. Johnson † Boswell, vol. I. p. 260. ‡ Boswell.

But the virtues of the heart, like the faculties of his mind, were also in continued exercise for the benefit of his fellow men; while the numerous humane, charitable, and religious associations, which do honour to the city of Philadelphia, bear testimony to the philanthropy and piety which animated the bosom of their departed benefactor, let it also be remembered, that, as with the good Samaritan, the poor were the objects of his peculiar care; and that in the latter, and more prosperous years of his life, one seventh of his income was expended upon the children of affliction and want. Dr. Boerhaave said of the poor, that they were his best patients, because God was their paymaster.

Let it also be recorded, that the last act of Dr. Rush was an act of charity, and that the last expression which fell from his lips was an injunction to his son, 'Be indulgent to the poor.'

"Vale egregium academiæ decus! tuum nomen mecum semper durabit; et laudes et honores tui in æternum manebunt."*

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* These words were addressed by Dr. Rush, upon his taking leave of the University of Edinburgh, to his particular friend and preceptor, Dr. Cullen. See Inaug. Diss. De Coctione Ciborum. Edin. 1769.

II.

Observations *on the* Origin *and* Nature *of the* Yellow Fever, *which prevailed in Providence, Rhode Island, in the summer of* 1805. *In a letter to* James Hardie, *Esq. Secretary to the Board of Health, N. Y. from Dr.* Parden Bowen.*

Providence, August 28th, 1805.

Sir,

Your letter of the 3d instant, written by the direction of the Board of Health of the city of New-York, requesting information of the origin and nature of the malignant fever, which then prevailed here, and a retrospective view of the fever in former years, came to hand while I was in the country, in a state of convalescence, from a fever taken, I presume, by constant attendance upon patients labouring under the fever, before their removal; and I have been compelled, since my return to town, by the pressure of business, and the time necessarily taken to procure correct information, to defer my answer till the present time, as most of the persons, from whom the information was to be derived, were scattered about the country; and I hope the Board of Health will not impute the delay to neglect, or want of respect.

I will now, without further preface, endeavour to give you as correct a statement of the fever, as the most careful in-

* With uncommon satisfaction we insert in the present number of the Register, the above highly interesting communication, from Dr. Bowen, an eminent physician of Rhode Island. Its appearance has been delayed until now, in order that we might gratify our readers with the perusal of the interesting document, on the same important subject, which follows the present article, and which, though for some time promised, has but lately been received. Ed.

vestigation will admit, and I hope, with the candour the importance of the subject demands.

And first, with respect to the origin of the fever. In order to investigate this point, it will be necessary to take into consideration the following circumstances, viz.

In the first place, the general state of the health of the town, and especially of that part where the fever prevailed.

2dly. The condition of the houses, wharves, docks, stores, &c. in the vicinity of the fever; and,

3dly. The connection this district had with the shipping.

With respect to the first circumstance, the health of the town, &c.

At the time the fever made its appearance, and for a long time before, the town in general was remarkably healthy; and this was the case more especially, with that part of the town, which was the seat of the disorder, immediately preceding its origin. For several years past, the town has been exempt from any remarkable epidemic catarrhal affection, angina, or other complaints, by many deemed the precursors of yellow fever.

2dly. Respecting the condition of the houses, wharves, docks, stores, &c. comprising the seat of the fever.

On the most careful scrutiny, it appeared that this district was remarkably clean and free from filth. There were no offensive gutters, nor accumulation of putrid animal or vegetable substances, to be found in or near it. The houses were detached from each other, generally; and in the occupancy of families, who might vie with any equal number, in point of cleanliness, in any part of the town. The wharves and stores had nothing offensive about them, and the docks were as clean and free from any obvious putrid and noxious effluvia, or filth, as in the most cleanly part of the town; and much more so than in some other parts, where the docks, at times, have been extremely offensive, from the noisome

stench issuing from them; and which, at the same time, has been increased by the putrid effluvium arising from damaged beef and fish in the contiguous cellars and stores; and yet, as far as my knowledge extends, no malignant or yellow fever has ever arisen therefrom, although these apparently formidable agents, with their combined powers, have existed in a number of cases, for several years past, that have fallen under my observation, and to such extent as to have excited very serious alarm for the consequences.

3dly. With respect to the connection of the sickly district with the shipping.

It is to be understood that the fever was confined, except in three or four cases, to be mentioned hereafter, to both sides of Water-street, extending about one hundred and thirteen yards parallel with the wharves. From the back part of the houses next the river, the distance may be about thirty-five or forty yards from the head of the wharves, and from the opposite side of the street, about eighty or ninety yards; and it appears as a matter of fact, that all vessels from the West-Indies, and elsewhere, have been permitted, and have actually come up to the town, and unloaded their cargoes at the wharves, without cleansing or performing quarantine, until since the commencement of the fever.

And it furthermore appears, that three vessels from different parts of the West-Indies, have arrived and unloaded at the wharves within the infected district, a very little while before the fever broke out, viz. the brig Planter, from St. Croix, arrived on the 4th of July; the brig Hiram, from Antigua, and the brig Juno, from Havanna, both arrived on the 12th of July, and the fever began in Captain Stephen Russel's family on the 19th following; between which time and the 25th, nineteen persons more were attacked, seventeen in this district, and two living at a distance from it. At this time, the town council ordered all that part of the town

to be evacuated, and the vessels removed; and the fever immediately ceased, except in two cases; one of which, a son of Captain Trowbridge, occurred on the 7th, and Mr. Clifford, on the 12th of August; the latter of whom declared to my partner, Dr. Eddy, and myself, that he was two or three times on board the brig Hiram, which vessel had been removed from her former situation, where the fever began, to the wharf back of the shop where he was employed, instead of being sent down to the quarantine ground. She has since gone to sea, and there are the strongest grounds to believe that Trowbridge had been in the infected street; and if not, the shop where he worked was not more than thirty or forty yards from where the fever first began.

Of the two persons above mentioned, who were early attacked, and resided at a distance from the infected part, one was Captain John Warner, and the other Mr. Jos. Masury, jun. and it is perfectly well known, that both had been employed on these wharves, and had been on board the suspected vessels; and there is no doubt but that they had the same fever the others had. Warner was quite yellow, and Masury died on the fifth day with the genuine black vomit, and other concomitant symptoms of yellow fever.

In addition to the above, I would beg leave to call the attention of the board of health to the following circumstances, viz. On the 25th of July, the order for the evacuation of the infected district, and removal of the shipping was issued, and immediately complied with, and the fever ceased, so that many families returned to their habitations about the middle of August, the very season when, in general, the yellow fever begins its ravages as an epidemic, and yet not the slightest case of fever or other sickness has appeared in this district, [August 28th,] and the town continues very healthy; and what renders the case still more remarkable, is, that this district was in so clean a state, that no kind of alteration of

its former condition has been made in it, except that six loads of sand have been carted into one dock, and that merely because two privies were situated over it, but which were constantly washed by the ebbing and flowing of the tide, and, of course, no considerable accumulation could, or did take place. This dock was not offensive, and the house adjoining the wharf, and very near to the dock, was the only one, whose inhabitants were exempt from the fever.

It further appears by the declaration of Captain Benjamin Dexter, who had three of his family taken with the fever, that when some of these vessels pumped out their bilge water, it was so extremely offensive, that the workmen on his store were made sick, and in some of them to vomiting. And Mr. Goff declares, that the bilge-water pumped from one of these vessels was so particularly offensive, that he was obliged to shut up the doors and windows of his shop, notwithstanding his workmen [shoemakers] had been much accustomed to the smell of bilge-water.

I would further state to the board of health, that the persons attacked with the fever had been on board the suspected vessels, as well as that they lived in the vicinity of them.

With respect to the condition of the above-mentioned vessels, the following circumstances appear, viz. The brig Planter had two men taken sick with yellow fever on board, at St. Croix, early in the month of May, who were carried on shore, as soon as the disease was ascertained, and died; but I cannot learn that the clothing belonging to them was brought home, and the vessel underwent no cleansing, before or after her arrival.

The Hiram arrived on the 12th, from Antigua, and on her arrival, Mr. Church, one of her owners, says that he threw overboard twenty dollars worth of sailors' clothes, and the reason he assigned for it was, that the countenances of the

people did not look well, and he thought the air of the vessel was not good, and that part of the infection came from her.

The brig Juno also arrived 12th July, from Havanna, and had one or two people sick on the passage home.

All these vessels, without performing quarantine or being cleansed, immediately on their arrival, unloaded at the several wharves of the sickly district, a little before the sickness began, as before stated.

Having thus related the circumstances respecting the origin of the sickness, as far as they have come to my knowledge, I am now to reply to that part of your request respecting its nature.

When the fever first made its appearance, considering the number attacked, and in so small a compass, in the vicinity of the wharves and vessels, and very near to where the yellow fever had twice before appeared in an epidemic form, it highly excited our fears; and when, added to these circumstances, we found them labouring under the following symptoms, rigours, violent pains in the head and eyes, back and limbs, prostration of strength, sickness at stomach, with great distress, which was a constant and universal symptom with them all, with fever, &c. we were almost confirmed in the belief of yellow fever; but as their eyes had not that suffusion so common to that fever, and the more decided and unequivocal symptoms kept off for four or five days, and considering the earliness of the season, we still hoped that we might be mistaken, and did not make a report to the council, officially, till the fifth day, when the symptoms assumed such an aspect, as left no doubt of its real nature; for now one patient was attacked with the black or coffee-ground vomit; another had a livid countenance, with petechiæ; a third turned yellow; a fourth had black vomit, and was yellow; a fifth had black vomit and stools; and a sixth black vomit and stools, and profuse hemorrhage from the mouth,

stomach, &c. and all of them great sickness at the stomach.

Six persons died about the fifth and sixth day from the attack. These symptoms, connected with the suddenness of the deaths, &c. will clearly point out to any person competent to judge of the case, that it was unequivocally the yellow or malignant fever.

I will now take a retrospective view of the foregoing statement, and draw the conclusion that appears to me naturally and fairly to result from it.

It then appears that the town of Providence has enjoyed a great degree of health for several years past, and been exempt from those epidemics supposed the precursors of yellow fever. That about the 20th of July, seventeen or eighteen persons were attacked with yellow fever, in a small district, till this time remarkably healthy. That this district was very clean and free from any obvious cause of sickness about the houses, stores, docks, or wharves; but that three different vessels, from three different ports of the West Indies, had arrived at, and unloaded on, the wharves of this district, without performing quarantine, or being cleansed; that one had lost two men with yellow fever, at St. Croix; another was suspected to be infected, by the owner; and that the third had had sickness on the homeward bound passage: that the inhabitants of this district and the vessels were removed on the 26th of July, and that the fever ceased; that about the middle of August, many of the inhabitants returned to their habitations in this district; that they have been there about a fortnight, and no sickness had recurred, notwithstanding no alteration has been made in the condition of this district, except six loads of sand put into one dock, merely because two privies were over it, but which were not, in any manner, remarkably filthy; that many of the sick had been on board of the suspected vessels; and, finally,

that they had been much affected by the extreme offensiveness of the bilge water of these vessels.

From the foregoing premises, I think we may fairly infer, that the fever was the yellow or malignant fever, and that it had its origin, or stood, somehow or other, connected with one or all three of the vessels above mentioned. This is, at least, my opinion, decidedly; and not only of the fever of this year, but in each epidemic yellow fever in this town, I think I have the most unequivocal evidence of its importation; and even in almost every sporadic case, I have been able to trace a connection with a source of foreign origin, either at the time, or, perhaps, by knowledge of it obtained a long time after.

Two such instances have come to my knowledge lately.

Now, notwithstanding my belief that the contagion is imported, I think it proper to observe, that I also believe, that it requires some peculiar, appropriate, and to me, inexplicable condition in our atmosphere, to render it capable of propagation, either as a medium, through which the contagion may be spread, or by combining with it, and thus rendering it active. It is like tinder fitted to receive a spark of fire, and as far as this appropriate state of air extends, when saturated or contaminated with the foreign or contagious principle, so far is it capable of communicating the disease to those who inhale it, and are predisposed to it: and I am led to this conclusion from the following circumstances: The disease, I believe, generally appears first as an epidemic, or in its propagating state, near to, or about wharves and docks, and extends its influence gradually and progressively; so that if a patient ever so bad, and even dies with it, is carried into the country, or, in the beginning of the epidemic, into a distant part of the town or city, remote from the water, he does not convey the disorder, even to those in frequent con-

tact with him : at least, this has been the case with us, and I believe is generally admitted as fact in other places.

Now, if this fever possessed the common character of other contagious diseases, it would, like them, in all situations, and in all seasons, be more or less capable of propagating its kind under these different circumstances.

What this condition of the atmosphere is, that by assimilating with the contagion, or serving as a medium to it, which renders it so destructive to the human race, I cannot pretend to say, or even conjecture : but that it is not the object of our senses, I am fully convinced, from long and much observation. The inference, however, from this hypothesis is obvious, if we cannot comprehend the condition of our atmosphere, which renders the disease capable of propagation, then we should be the more careful to prevent the foreign principle from being brought into contact with the domestic one. This, however, is a task truly peculiar, considering the thousand different ways by running articles from vessels, by clothes sent from them, by persons visiting them secretly, &c. &c. by which it may be conveyed.

Before I quit this subject, I must beg leave to call the attention of the board of health to one circumstance attending yellow fever ; a circumstance of the utmost importance in investigating its nature, and so obvious, that one would think, that the meanest capacity would comprehend it, and which, at the same time, is overlooked by many eminent and ingenious men. It is this : that the first frost, or what is called black frost, destroys the real yellow fever radically, although it may, at this time, have extended its influence ever so far ; whereas the bilious and other fevers of our country, which sre said to be only grades of the yellow fever, are often extended into, and through the winter and spring. Now, it appears to me absurd to suppose, that a cause which is capable to destroy the highest grade of a fever, should be unable to

produce the same effect upon the lower degrees of it: but as we every year see, that frost radically destroys the yellow fever at once, while our other fevers continue through the winter, in many cases, the inference is plain and irresistible, that there is a specific difference between them, although there may be some symptoms in common to them all.

With respect to a retrospective view of former years, I must beg leave to refer the board of health to some documents I am about to send on to Dr. Hosack upon this subject, and which I shall request him to give them the perusal of, if they should deem them of sufficient consequence.

You will please to tender my respects to the Board of Health.

I have the honour to be, with much respect,

Your obedient servant,

PARDON BOWEN.

September 10th, 1805.

SIR,

I have been under the necessity to withhold my communication until this time, as I was informed that one of the circumstances mentioned therein, was not correct, and the persons capable of giving correct information were absent. I have this moment seen one of them, and am now able to say, that instead of the brig Juno's having one or two persons sick on the homeward bound passage, she had only one man sick or unwell several days in the Havanna, but was able to do his duty home. This vessel was also at New-Providence during her voyage.

No person is or has been sick in the district, where our fever prevailed, and the inhabitants are all returned, with but a few exceptions.

Yours, with esteem, &c.

PARDON BOWEN.

III.

OBSERVATIONS *on the foreign origin and contagious Nature of the* YELLOW FEVER, *as it has prevailed in Providence, Rhode-Island, and other parts of the United States. In a letter to* DAVID HOSACK, *M. D. New-York, from Dr.* PARDON BOWEN, *Physician, Rhode-Island.*

SIR,

THE origin and nature of diseases, with their modes of operation on animal bodies, have, from the earliest history of medicine, employed the researches, and exercised the ingenuity of physicians and philosophers, in every quarter of the globe; and notwithstanding a great mass of what are called facts, have been produced to establish their origin, and an abundance of curious and ingenious theories, framed to elucidate their nature and *modus operandi*, yet, they still remain obscured with great doubts and ambiguity; and it is probable they will remain so in a great degree, notwithstanding all the aids furnished by the recent, numerous, and wonderful discoveries, in chemistry, anatomy, and the collateral branches of medicine.

It is true, that we often can trace a connected train or series of symptoms, and thus name a disease; but to discover and elucidate the material or cause, or a complication and combination of causes, and their mode of operation on animal bodies, constituting a disease, is far, very far, beyond my comprehension; and that it was also beyond that of all the theorists and system makers up to the present time, is proved, by each in succession building his own system on the abolition of that of his predecessors.

It is as difficult to conceive how the cause of a disease, be it contagious or infectious, or of whatever class you may please to designate it, operates on the living animal system, so as to produce the peculiar morbid action or excitement constituting its particular nature, as it is to comprehend the manner in which the mind, by the power of volition, operates on the muscular fibres of particular parts, to excite them into action, and produce certain determinate movements, and this without the knowledge of the animal, of even the muscles put in requisition.

This fact is continually passing in review before us; and yet after a lapse of many thousand years, and the united researches of mankind, what do we know further respecting the mysterious manner in which the mind acts on matter? What new thing, or new fact, has thrown a ray of light upon it, to irradiate the benighted understanding—to withdraw the impervious veil, and disclose this arcanum of nature? None! and, probably, mankind ever will remain in profound ignorance of it, while they retain their mortal form and nature: for only spirit, after death, can comprehend how spirit, or the vital principle, can operate on substantial forms.

Although I have said, that I conceive it impossible to comprehend the nature and *modus operandi* of diseases beyond the nosological classification of them, and that, in general, their source or origin, was involved in much obscurity; yet I shall endeavour, by producing a series of facts, to prove the origin of one that has excited more interest, and produced more alarm, for some years past, than any that is recorded in the annals of medical science in America: I mean the yellow fever. And I wish to have it distinctly understood, that when I speak of yellow fever in the United States, it is that disorder described by Dr. Chisholm and other writers, which has prevailed in the West-Indies since the year 1793; and which I believe to be a different disease,

and more malignant than that which was called yellow fever before that period; at least it appears so to me, and I have had an opportunity to view the disorder in both of the periods above alluded to; having been surgeon of a ship in Hispaniola in the year 1782, when the disease, then called yellow fever, raged with as much violence as is usual in that climate, and seized many of the crew on ship-board, labouring under every disadvantage of foul air, and crowded so close in their hammocks, between decks, that it was difficult to get between them; when, under these unfavourable circumstances, only seven out of more than one hundred men died.

It is now several years since the yellow fever, that terrible scourge of our maritime towns and cities, has visited the United States, at least the northern section of them; and we can now contemplate it more calmly, and weigh the evidences respecting its origin with much more accuracy, and make up a judgment with more precision, than when our minds were agitated with the apprehension of its annual visits.

It is generally well known, how much the question respecting the origin of this fever has engaged the attention, and employed the pens of writers in medicine, and how much has been said and written on the subject by other people, without settling the point in dispute; but as every one ought, without being biased by preconceived opinions, to make up his judgment upon any point by the preponderance of the facts and evidences brought in support of it; so, I suppose, different persons have formed different opinions about its origin, according as the weight of evidence has inclined to the one side or the other.

There are many, I know, who are led by the opinions of others, without taking the pains of investigating facts for themselves; and others influenced by the pride of opinion,

who, having once imbibed an erroneous idea, will never relinquish it.

For myself, I had early entertained the opinion, that the yellow fever was an imported disease; and it may appear singular to you, when I declare, that I was led to this belief by reading Dr. Rush's treatise upon the yellow fever of Philadelphia in the year 1793, to prove its domestic origin. But the history of that fever, as given by him, appears to me to warrant a belief of its foreign origin. I, however, held my mind open to conviction, to be either confirmed or changed in my opinion, as further and more conclusive evidence should appear.

And I can most conscientiously declare, that the great mass of evidence produced since that period, has fully confirmed me in the belief that the yellow fever, whenever it has appeared in this town in an epidemic form, has always been imported, as well as in every sporadic case.

To support this opinion, I must go back to the first appearance of the fever in this town, and adduce a series of facts upon which it is founded; and in order more fully to support it, I shall submit a chain of reasoning growing out of these facts, and connected with the circumstances attending them.

The first case that I saw in this country that I consider to have been the genuine yellow fever, was that of my nephew, the son of the late John I. Clark, who came through Philadelphia during the early period of the fever there, in the year 1793; from whence he arrived in this town after a short passage, was taken immediately ill, and died in a few days with what appeared to us afterwards the real yellow fever.

No other case, either in the family, or in the town, occurred, to my knowledge, in that season.

In the year 1794, several cases occurred, attended with circumstances so peculiar and strongly marked, that they

made a deep impression on my mind, and proved beyond a doubt, that they, at least, were imported, and of foreign origin.

In August of this year, (1794,) Captain Joseph Gould arrived in a schooner from North-Carolina, being himself and two more, out of three persons who comprised his crew on board, sick; they were so ill when they arrived in the river, that they could not get the vessel to the wharf; and I visited them on board, and found these three persons labouring under all the marked symptoms of yellow fever; such as great distress and sickness at stomach, yellow skin, and in one of them the black vomit; this man died and was buried in Rehoboth; but as I had pronounced it the yellow fever, the alarm spread, and only two or three persons followed the hearse at a distance.

It now became a question with me to determine how these people came by the fever: and to my repeated inquiries Capt. Gould replied, that they came from Wilmington, in North-Carolina, and that it was as healthy as usual there; and that no yellow fever, or other epidemic, prevailed in the town or neighbourhood: and I then concluded, that these cases either originated on board the vessel, or in North-Carolina, and did not stand connected with the West-India yellow fever.

It so happened, that in a few days after the arrival of the before-mentioned schooner, Capt. John Bullock arrived in another vessel, from another port in North-Carolina, very sick. I was called to him, and found him labouring under the most marked symptoms of yellow fever. He recovered; and to my inquiries answered as Capt. Gould had done, viz. that no sickness had prevailed before or at his departure, either near the river, or at the port he sailed from; and that no other person on board his vessel had been sick, or was taken with the fever afterwards. This more fully confirmed me in the opinion that this case of yellow fever also originated on

board his vessel, unconnected with the West-Indies; and, probably, I should ever have remained in this belief, if Capt. Gould, who came home in the first vessel, had not survived. Some time after his recovery, recollecting the earnestness of my inquiries respecting the circumstances of his vessel and voyage, he came to inform me of certain facts which have a material bearing on the point in dispute, and tended, as much as any thing I had become acquainted with, to establish my belief in the foreign origin of the yellow fever, and particulary its connexion with the West-Indies.

He gave me the following circumstantial information, viz. That Capt. Slocum sailed in a vessel belonging to himself and his father-in-law, Capt. John Bullock, from an infected port in the West-Indies: that he lost three of his hands with yellow fever on the homeward voyage: that he arrived at this port with a cargo of West-India produce; and his crew being most of them dead, and he himself quite indisposed, Capt. Gould went on board with another set of hands, and proceeded directly for Wilmington, in North-Carolina, where he arrived after a short passage, and discharged his cargo, and set out immediately on his return voyage; during which, he and two of his men were seized with the fever, as before related. He further informed me, that the vessel had undergone no kind of cleansing or purification, either at Providence, during the voyage, or at Wilmington.

This information unfolded the source, in the most satisfactory manner, from whence he and his crew derived their fever; but it threw no light upon the case of his father-in-law, Capt. Bullock, whose vessel had not been in the West-Indies, like the other; and the port in North-Carolina from whence she sailed was healthy, and nobody on board of her had been sick except himself; and yet his was as decided a case of yellow fever as those in the first vessel.

Capt. Gould then proceeded to disclose another fact, which

resolved every doubt, and corroborated, in the most conclusive manner, the origin of the fever in both vessels.

He stated, that Bullock and himself were joint owners of both vessels; that they sailed about the same time from different ports in North-Carolina; that they met at sea, and that Capt. Bullock went on board Capt. Gould's vessel, and staid one night; and it appeared that Capt. Bullock was attacked with yellow fever in about six days afterwards. The case, then, stands thus: Capt. Slocum arrived from a port in the West-Indies where the yellow fever prevailed; three of his hands died with it on the homeward voyage, and he was himself sick. Capt. Gould, with a fresh set of hands, went on board, without any kind of cleansing of said vessel, proceeded to Wilmington, and on his return was himself, and two of his people, seized with yellow fever. His father-in-law, Capt. Bullock, went on board his infected vessel at sea, staid on board one night, and came down with the same fever in about six days after. Thus affording the strongest possible evidence the case will admit of, of the foreign origin of this fever. How clear and connected are the series of facts, without any interruption in its links, all tending to prove this point! approaching as near to the certainty of mathematical demonstration as this kind of evidence will admit of. Nobody took the disease from these patients. And I would observe, that all the above stated facts can now be substantiated by living witnesses.

In the year 1795, I attended a person from New-York, who died with yellow fever, near the market, in a large house crowded with tenants, and under circumstances apparently favourable to its propagation, and yet nobody took it from him. He had a yellow skin, petechiæ, hemorrhage, and black vomit. The yellow fever was in New-York when he left it.

Passing over these scattered and solitary cases, I come now to the year 1797, when our first epidemic yellow fever

appeared amongst us, carrying desolation through the district where it raged, and dismay and terror through the town and country.

Here, too, the evidences of its foreign origin were so clear and conclusive, that it would appear impossible that an unprejudiced mind could withhold its assent to it. I will relate its history:

About the 4th of August, 1797, the schooner Betsy, belonging to Messrs. Wardwell and Coxwell, of Bristol, and commanded by Capt. Burr, arrived at this port from the West Indies, and came to at Capt. Joseph Tillinghast's wharf, in the south part of the town, where she lay for some time. In about six days, eight persons, in different and remote parts of the town, were all attacked with a fever of a similar character, which destroyed seven of them in five or six days, and excited a universal alarm; and the more so, considering the patients resided so far apart, rendering it thus more difficult to assign any local cause for it, and thus also preventing the inhabitants from taking the usual precautionary steps to guard against it.

At the same time these seven persons died in town, Mr. Cole, a custom-house officer belonging to Warren, twelve miles from this town, and Mr. Wimor of Rehoboth, about four miles distant, were both seized and died with the same fever in a few days after the attack, as appeared by correct information obtained from persons who witnessed their sickness. I was requested to visit both of them, but was unable to leave town on account of the sickness and alarm here.

The eight persons above alluded to in this town, were William Tillinghast and Mrs. Arnold, the wife of our town treasurer, who lived near Joseph Tillighast's wharf, where the above-mentioned schooner Betsey lay, four women in John Brown's long house, in the south part of the town, some distance below this vessel, and Lemuel Pitcher, and ——.

Fuller, in George street, a very remote and elevated situation.

You will at once see, sir, that these persons lived at a considerable distance from each other; some near the river, some, as Pitcher and Fuller, in one of the most elevated parts of the town, Wimor in the country, and Cole in Warren. And the question will naturally arise in your mind, how it was possible, that all these people could be attacked with the same fever from one and the same source?

This, I hope, I shall prove, to your satisfaction, they did. I confess, however, on a first view, and a superficial observation of the case, it appears to be impossible. But when we come to examine all the circumstances connected with these cases, we can find in all of them the most direct connection and communication, either with the schooner at Tillinghast's wharf, or with persons or clothes of sick persons, who came home in her, or, as in the case of Mrs. Arnold, residing so near her, as to be within the sphere of her contagious influence.

In pursuing this investigation, I will first call your attention to the cases of the four women in Mr. Brown's house, a considerable distance below the vessel, and who had not been near her, and must, if they took the fever from her, have taken it indirectly, and this I shall prove to you, was the fact. Obadiah Brown, one of her crew, came home sick at the time of his landing, and went directly to this house, where his sister then lived, and carried his bedding with him. Bear in mind, sir, that this house contained nine families, comprising thirty-five souls; and it so happened, that on the next day, or the day following, while his sister was pounding the blankets on which he had lain during his sickness, in a barrel with hot water, these four, these very identical four women, came into the room from four other families in the house, and stood near, and partly

over the barrel for about half an hour during the operation, and on the fourth day thereafter, were all taken with the fever, and three of them died in four days from this period. These facts I had from the survivor, who was a member of Dr. Gano's church, and was informed, at the time, of the importance that the information she would give should be correct. And it is a powerful corroborating proof of its foreign origin, that no other persons of the numerous tenants of this house took the disease, which almost certainly would have happened, considering its crowded situation, if it had originated in, or near it.

It is true, this inference has been objected to, because the woman pounding the clothes escaped the complaint. But this is by no means a conclusive argument; for it is well known, that some are not predisposed to take the fever. And, besides, I conceive it very possible, that the powerful state of excitement she was under by so hard labour, and the perspiration she was in, might have prevented its action upon her system, or have carried it off if inhaled.

Look now at Fuller and Pitcher's cases, in George street: These, also, will tend to prove, most powerfully, that they received their fever from this same vessel, living at a great distance from the general scene of the ensuing sickness, in an elevated and airy situation: no one can suppose, or will venture to say, that causes, usually assigned to produce the disease, existed near their habitations. When a cause is sometimes known to produce a given effect, even if this effect does not seem to follow regularly the apparent cause, it is much more philosophical to explain the effect from this cause, than from an imaginary one, or from no cause at all, as was the case with these two men; but here we have a cause fully sufficient to explain the effect in the most satisfactory manner, and remove every difficulty resting upon it.

These two men, Pitcher and Fuller, worked in their shops on the head of Gifford's wharf, within seventy-four feet of the infected vessel at Tillinghast's wharf; and it is also known, that Fuller not only did work for, but was on board of her.

Wimor and Cole's cases, were, if possible, more absolute and conclusive proofs of the foreign origin of this fever, than either of the foregoing; and also, that they both derived their fever from the same source; for it can be proved, that both had been on board the infected schooner while on her passage up the river. And it would be a most extraordinary circumstance, that only one person should die in Rehoboth, and one in Warren, this season, with yellow fever, and that each of these had been on board this vessel; unless you admit the supposition that they took the fever from her.

Tillinghast not only lived near the vessel, but had been on board of her; and Mrs. Arnold resided very near, and directly opposite the wharf where she lay.

The fever by this time excited the utmost alarm and terror, both on account of its mortality, and the numbers seized with it; and it was now, after the foregoing eight cases, confined entirely to a small circle in Tillinghast, Gifford, and Arnold's houses, the three most contiguous to this vessel; and from it gradually extended, as from a central point, till its progress was finally stopped by frost; forty-two persons falling victims to its fury. Of these, sixteen died in three houses most contiguous to the vessel. And from Mr. Arnold's every soul was swept off.

I presume that it will not be denied that this was the genuine yellow fever. If, however, any doubts remain about it, I will describe the general course of its symptoms, which I think must remove them. I will take Mr. William Tillinghast's case, a journal of which I have preserved. The most prominent of his symptoms were, a yellowish flush about his

breast and armpits; his eyes in a state of inflammation, and blood-shotten, comprehending not only the conjunctive tunic investing the globe of the eye, but also that part reflected under the eye-lids, exhibiting the appearance of a bright red colour laid over a coat of orange; his mouth and fauces partaking of the same inflammatory symptoms with his eyes; frequent retching, petechiæ, black vomit, and death, to close the mournful scene.

There were some circumstances connected with the question of the origin of this fever, of so singular a nature, and having so strong a bearing upon it, that I cannot forbear relating them, seeing they will assist us the better in making up a judgment about it.

The fever, in its progress, extended as far north as Capt. Benjamin Dexter's, and south, as far as Mr. Brown's long house, before mentioned, the distance of about one hundred and eighty paces. And it appears that a company followed seigning menhaden through the summer, up to the time of the fever, averaging about ten barrels three times a week, which were brought to Ashton's wharf, four houses north of Dexter's, opened, and the guts and gills thrown into the dock, some of which would be necessarily exposed, at low water, to the influence of the sun in the day time. Again; south of this district, and four or five houses beyond where the fever extended, were situated three distilleries: the middle one occupied as a gin distillery, with which was connected a long range of hog sties, containing two hundred and fifty hogs, where, consequently, there was a combination of animal and vegetable matters, constantly under the putrefactive process in its highest state of activity, aided by heat and the crowded situation of the animals; and from whence issued such fœtid and offensive exhalations, that all the neighbourhood were incommoded, and the whole atmosphere impregnated with them. These were sources as

prolific of infection and yellow fever as the most zealous advocates of domestic origin could conjure up: but how stood the facts respecting them? Why, the yellow fever, already existing in a central point between both, gradually extended itself toward them, till it arrived, at length, to within a few houses of them, at each extreme, and there stopt. No person employed in the fishery on the north boundary took it; and those engaged at the other extreme in the distilleries pursued their employment through the whole course of it, without the slightest attack.

These, sir, are extraordinary circumstances, and necessarily arrest the attention of every person disposed to scrutinize facts; and I will hazard the temerity to propound this query: Did the putrid exhalations, the mephitic gasses, and the septic acid, evolved, and continually issuing from these magazines of corruption, arrest, in any degree, the progress of the disease? Or was it some other powerful agent that interposed a barrier to the progress of this terrible malady? I will not presume to answer in the affirmative to the first of these queries. I cannot believe a thing so totally repugnant to the universally received opinion of mankind; and yet I think more facts and further observations are required, before we make up a final decision about it.

Of the yellow fever of the year 1800, I shall say but little, not having it in my power to relate many circumstances from personal knowledge, as I was absent at its commencement, and during a great part of its continuance; but I believe the foreign origin of this particular epidemic has been generally admitted, even by persons who believe in the domestic origin of almost all other cases of it. Nay, they even point out the identical chest of infected clothes brought into Carr's house, which were there opened and

washed, and from whence the fever immediately spread in every direction.

Passing over this, we come now to the fever of 1805, the third epidemic yellow fever of this town, concerning which, I shall produce facts and evidences of its origin, that I should hope would carry conviction to every mind not rendered impenetrable by preconceived opinions and prejudices. I beg first to premise, that before and at the time the fever made its appearance, the town was, in general, remarkably healthy; especially that part of it which was the seat of the disease immediately preceding its first appearance; and that the town had enjoyed a great share of health for several years back; during which no epidemic, catarrh, angina, or other complaint, the supposed precursors of yellow fever, had occurred.

Having stated these facts, I proceed to the history of this epidemic.

On the 4th of July, 1805, the brig Planter arrived from St. Croix; and on the 12th, following, the brig Hiram arrived from Antigua, and the brig Juno from the Havanna, and came directly up to Capt. Godfrey and Dexter's wharves, within a few rods of each other, where they unloaded without any cleansing or precautions of any kind; and I beg leave to call your attention, in a particular manner, to the above dates when these vessels arrived; and to bear in mind, also, that they came from infected parts; and that one of them, the Hiram, had had sickness on board: That they arrived at Godfrey and Dexter's wharves, while the town was in perfect security, and in the enjoyment of full health, on the 4th and 12th of July, and there unloaded; and then mark, that on the 19th following, the fever first appeared in Captain Dexter's house; between which time and the 25th, in the short period of seven days, seventeen persons were seized with it, in a small district immediately surrounding

these vessels; and, also, two others, whose cases will hereafter be mentioned.

At this time, the 25th July, (six persons being now dead with the fever) the town council ordered the above-mentioned vessels, and every inhabitant within certain limits around them, removed, both sick and well; and the fever immediately ceased, except in two instances; those of Clifford and Trowbridge; and Clifford declared to me, that he had been on board the Hiram after her removal. And there is the strongest reason to believe, that Trowbridge had been in the infected street; and if not, it is known, that he worked within fifty or sixty yards of where the fever begun.

Of the two persons attacked, who resided at a distance from the district, one was Captain John Warner, and the other, James Masury, jun.; both of whom had been on board the suspected vessels. This fact is not denied; and there is no doubt they had the same fever with the others. Warner, in addition to the usual symptoms, was yellow; and Masury died on the fifth day with black vomit, and the other concomitant symptoms of the disease; which were in the first two or three days, rigours, violent pains in the head, eyes, back and limbs, prostration of the strength, suffused state of the eyes, sickness and distress at stomach; this was a constant symptom; and after three or four days, petechiæ, hemorrhages, sublivid or yellow skin, and black vomit. A bare recital of these symptoms will convince you, that this disease was the real yellow fever.

I before said, that the town council had ordered the suspected vessels, and all the inhabitants in the infected district removed, and that the fever immediately ceased; and so complete was its eradication, that except the cases of Trowbridge and Clifford, which have been accounted for, and I hope satisfactorily, no new case occurred, although many of the inhabitants returned to their houses by the mid-

dle of August, and the remainder by the twentieth; the very period when the yellow fever generally begins its career in the United States.

When we consider also, that no alteration was made in this district, except by casting six loads of sand under two privies, situated over the water, and constantly washed by the tides, and yet find no return of the fever; whereas in every other instance, when it has assumed its epidemic form, it has continued its destructive ravages till subdued by frost, we are irresistibly led to seek some foreign and extraneous agent, armed with powers capable of producing so desolating a pestilence.

If, too, we take into consideration the local situation and circumstances of this part of the town, and its inhabitants, their houses detached from each other, clean and well ventilated, their possessors easy in their circumstances, annoyed by no foul sewers or gutters near them or the wharves, and the docks as clean and free from filth as any in the town, and much more so than in many other parts, where the fever did not appear; we are compelled to seek the cause in the vessels which had just before arrived at this very point, and unloaded without cleansing or ventilation. And when, added to this, we unite the facts of their coming from infected ports in the West-Indies, and that one of them had had sickness on board, we cannot avoid, from the clearest inductions of reason, concluding, that one, or all of them, were the cause or causes from whence the fever was derived; for unless we admit this inference, in vain shall we seek any other visible or assignable cause for it.

Before quitting the history of this particular epidemic, I will relate a circumstance of some weight, as tending to prove the remarkable exemption of the whole district from any visible cause of the disease.

After the return of the fugitives to their homes, about the middle of August, expecting, that if the fever were of local origin, it might reappear, they sat themselves to work to discover the cause, and in their investigation could find nothing in the district that could support such an opinion, except the two privies before named. These were situated on both sides of Christopher Arnold's dock; from the dock an avenue leads to the street about twenty feet wide, and eighty in length; at the end of this avenue are situated Captain Christopher Arnold and Captain Christopher Sheldon's houses, and almost directly opposite, Captain Pardon Sheldon's house; and notwithstanding the contiguity of those buildings, to the only spot supposed capable of causing the fever, not a soul in them was attacked with it. This fact proves that these privies were not the source of the disease. I had the curiosity to visit them: they were situated at the sides of the wharves over the water, and daily washed by the tides; and the most fastidious minds might have ventured to pay their devotion at those temples of Cloacina without scruple.

Having thus stated the principal facts connected with the appearance of the yellow fever in this town, that have come under my immediate observation, or been derived from unquestionable sources, and which can now be substantiated by living witnesses, I shall make some general observations, and draw such conclusions as are warranted by the facts and fair reasoning from them. And

1st. We will consider the general state of health of the town, prior to the appearance of the yellow fever that appeared in an epidemic form.

2dly. Something further of the situation of the town, respecting its connections with docks, wharves, shipping, &c. and,

3dly. With other parts of the town, combining all the supposed causes of yellow fever, but where it has never appeared, at least in an epidemic form.

With respect to the first consideration, the general state of health of the town, at, and preceding the several epidemic yellow fevers, I would observe, that in the year 1792, we had a singular epidemic for our climate; many persons became yellow, with a high saffron colour, and sometimes almost black urine, costive bowels, &c. but with neither fever or thirst. This was undoubtedly the jaundice; but what constituted its peculiarity was, that it was accompanied in many cases with petechiæ, vibices and hemorrhages, and yet it was not mortal. In only one case did it prove fatal, that I know of.

In 1794, an epidemic fever prevailed on the west side of the river, beginning, and being principally confined to the hill near Hayle's tavern, and from thence as far eastward as the high ground extended.

In 1795, another, and more extensive epidemic fever began on the west side of the river, appearing first near where the theatre now stands. These were undoubtedly the fevers of our country, having all the symptoms of our typhus fever, diversified by the peculiarity of constitution in many cases; but essentially different from the yellow fever; and the mortality was comparatively small, considering the numbers attacked.

During both these years the town was remarkably healthy on the east side of the river, as it was also in 1796, and till the yellow fever began in August, 1797; and no part of the town was more exempt from sickness during these years, than that which was the immediate seat of the yellow fever.

With respect to the yellow fever of 1800, I do not know, that any remarkable disease preceded it. I have no notes respecting the subject; but as it is generally admitted, that

this fever was not of local origin, it is less material to determine this point.

With respect to the yellow fever of 1805, I have before remarked, that preceding it for several years, and till its commencement, the town had enjoyed a remarkable degree of health.

With respect to the second consideration, as relating to the situation and connection of the districts where the fevers have prevailed, with shipping, docks, wharves, &c. I would observe:

The seat of the first fever, that of 1797, was from Mr. Godfrey's to Mr. Brown's house, opposite Captain N. Power's, on both sides of the street.

That of 1800, from Mr. William Thayer's to Thomas Sabin's; and the last epidemic yellow fever of 1805, was very circumscribed, occupying only a small circle around Godfrey and Dexter's houses; the three epidemics comprising a distance short of five hundred paces. These different seats of the fever, you will perceive, constitute but a small part of the town, bounding on the river: they pretty much comprise one district only, and stand more immediately connected with the shipping, than any other part of the place, and more exposed to any malignant or contagious diseases they may be infected with on their arrival.

Any one who will visit this part of the town where these fevers prevailed, or who had visited it during those periods, will seek in vain for those causes of its domestic origin which have been said to generate it. Let us examine, for instance, the seat of the yellow fever of the year 1797. View the ground gradually rising from the river up to the back street; examine the houses from Godfrey's to John Brown's house; see them clean, well ventilated, and detached from each other; occupied by people in easy circumstances, and good livers; go down to the stores and wharves, you find them

also clean and free from offensive smells; look into the docks, they penetrate but a little way in, and are thus the more easily washed by the tides; you see nothing in them that appears to be the cause of the fever; with less dock effluvia than you find in many other parts of the town, where the fever has never appeared. In a more particular manner, look at, and into Mr. James Arnold's house directly opposite the infected vessel, enjoying a large open space in front, of 120 feet breadth, and reaping all the benefits of the sea breezes; the houses on both sides, detached on the south sixty feet, and on the north eighty feet distance, and connected backward with a beautiful small meadow, extending two hundred feet eastward, in full vegetation: consider all these circumstances, and then determine, whether this is the dwelling you would have selected for the fever to exert its most mortal and concentrated power upon; and yet here, in a most particular manner, it exhibited its utmost malignancy, leaving not a soul behind to mourn its ravages.

If it is objected to the above description of this part of the town, that Mr. John Brown's long house was an exception to it, I grant it, for here, and here alone, in the whole range of the district, was there an accumulation and combination of the causes supposed capable of originating the disease: but I have, I hope, satisfactorily accounted for the appearance of it here before, and will only observe, that after the death of the three women who died in this house in the very beginning of the fever, no other person was attacked in it.

The foregoing observations respecting the seat of the fever of 1797, as connected with the shipping, docks and wharves, the cleanly condition of the houses, the comfortable circumstances of their tenants, and the exemption of the district generally, from filth, stench, or any apparent cause of disease, will apply with equal force, to the seats of the fevers of 1800 and 1805; in fact, they comprise but one district of small

extent, of less than five hundred paces; the first of the fevers of each year, in part, running into that of the others, so that it is needless to detain you longer on this subject. I will only appeal to the knowledge and candour of those gentlemen present, who were here during the prevalence of the fevers; and ask them, whether at those periods, or since, while visiting in this district, they discovered, by their organs of sight or smell, or through any other channel, any of those causes assigned by the advocates of domestic origin, which appeared to them capable of generating yellow fever? And I will go further, and ask them, if they have not, in several other places in the town, seen these assigned causes existing in a high degree?

I come now to the third and last consideration, viz. that respecting other parts of the town, combining all the supposed materials and causes of the fever, and yet, where it has never appeared, at least, as an epidemic.

And, 1st. I will mention the three distilleries in the south part of the town, with their two hundred and fifty hogs, wallowing in their accumulated filth; contiguous to which, is the south dock, with its waters loaded with filth and putrifying materials, brought down by the rivulet, and emptying into it the aggregated result from the whole range of the hill east of the town.

So prolific was this source thought to be of yellow fever, that one of our most respectable citizens, in an essay on the subject, considered it a principal one. And when objections were made to this opinion, on the ground that the fevers did not appear in this neighbourhood, being at a considerable distance north of it, he broached this curious hypothesis to support his doctrine, viz. that contiguous to this sink of impurity, on its south side, rises Fox Point Hill, eighty or one hundred feet high; that the noxious exhalations ascending,

were kept condensed by this hill, till they gained the summit, when they were wafted, by the southern gales, over all the contiguous and neighbouring houses and hog pens, up to Tillinghast and Gifford's wharves, and over the infected schooner, and then descended, fraught with pestilence and desolation, upon this devoted spot.

This opinion needs no refutation.

Let us now turn our attention to other parts of the town, and see, if the above described situation could not originate the fever, whether we cannot conceive of one, so combining, in a super-eminent degree, all the assignable causes of domestic origin, that it shall absolutely compel our assent.

I will attempt this description. We will first suppose the front, or head of a dock sixty feet wide, made by a street in a populous part of the town—let this dock extend, gradually widening southeasterly, a quarter of a mile, to the channel of the river; bounded on the one hand by marshes and stagnant pond holes, and on the other, hemmed in by wharves: next let us imagine the water of this dock to have no current, in consequence of its confined situation, and to be very shallow, merely rising and falling with the tides.—Now let us again suppose the bed of this extensive dock to be a soft and miry mud, continually, during the heat of the day, discharging myriads of visible air bubbles, which, arising through the water, discharge their gas into the atmosphere; or when the water is out, into it, without this medium. Here we have got all the requisite causes and conditions for the fever that can be obtained from the river.

If, now, we can superadd equivalent causes from the land, we shall have obtained the whole groundwork and complicated machinery of domestic origin.

We will again suppose, that by every rain is washed down all the accumulated vegetable and animal substances, of more than half a mile in length, of one of the principal

streets in town, and deposited in this dock, there to be commingled with whatever had been previously collected, and exposed to the fervid rays of an almost vertical sun. We can now easily imagine, that from this magazine of congregated and heterogeneous materials, of vegetable, animal, and marine productions, shall arise exhalations, so surcharged with noisome and mephitic principles of this Pandora's box, as to fill the circumambient air, and offend, and sometimes almost to stifle the neighbouring inhabitants and passing stranger. I will only tax your indulgence with one more supposition, and shall then have the picture completed. We will conjoin to it an epidemic yellow fever constitution of the atmosphere, such as was said to prevail in the years 1797, 1800, and 1805, when the yellow fever prevailed in this town.

Having thus put in requisition, and arrayed under the most favourable circumstances, every possible cause, said by the supporters of domestic origin, to produce yellow fever; shall we not confidently expect to see all the neighbouring inhabitants swept off by the generated pestilence? and this devoted place left desolate and deserted? And how incredulous would the supporters of domestic origin be, were I to inform them, that the foregoing picture was not a fiction, but a real transcript from nature—drawn, to be sure, with feeble colours—and that the inhabitants remained harmless in the focus of this mephitic atmosphere, although their dwellings were immediately contiguous to the northwestern parts of it, and in the range of the southerly breezes, and under circumstances, where the exhalations must have acquired their maximum of power; that no yellow fever ever approached this street; every body reposing in security, and rising to pursue their usual occupations, enjoying as much health as fell to the share of the inhabitants in any other part of the town, and only wondering that people should be frightened at ideal danger.

I presume, sir, after what has been said above, I need not name *muddy dock*, to enable you to recognize the resemblance of the foregoing picture; for there you will find every part of the description realized, except that, since the prevalence of the fever, the head of the dock has been filled up some distance off toward the channel; and that I forgot to mention that some of the adjoining houses were built upon made land, filled in upon marsh; another alleged cause of the fever.

If it were necessary to point out other situations, thought to be peculiarly adapted to generate an indigenous yellow fever, I would direct your attention to that part of the town extending from the bridge westward, comprising Westminster, and part of Weyborset streets, which are built almost entirely on made land, filled in upon marshy and swampy ground, and so low, that in many of them their cellars contained stagnant water, and in some it remained, through the season, a foot deep, covered with green ooze, and which rendered them totally unfit for use. On each side are a range of docks, daily bare, at ebb tide, with a bottom of deep and soft mud, partially washed by the tides, but never scoured by its current. One of these streets sends down through its whole length of half a mile, during every rain, whatever filth it may contain, which is deposited in the river, near the bridge; and to this we may add, during some years, putrid beef and fish, deposited in cellars. This has often been a public nuisance; and I well remember that Dr. Williams, who had the idea of domestic origin fully engrafted in his head, made a complaint to the town council about it, and was about to remove because no steps were taken to rid the town of it; and yet no yellow fever has ever visited this part of the town, although one of the most crowded and populous districts in it. It is even one of

the most healthy parts of it. It has, in common with the low main street, on the east side of the river, extending a mile upon its margin, been generally more exempt from disease, especially fevers, than the elevated parts of the town. And this fact will appear the more extraordinary, if we take a slight general view of the town : You find it situated partly upon, and partly between, two elevated hills ; intersected by the river ; containing many wharves and docks, or receptacles, subjected to the washing down into them, of whatever is accumulated in the higher grounds, necessarily containing much filth ; and yet it is an incontrovertible fact, that the high and elevated parts of the town are much more subject to fever than the low parts ; and so much so, that it has completely confounded the established opinions of physicians and philosophers, and prostrated their theories in the dust. If any gentleman can explain the cause of this difference, I will thank him ; I have been endeavouring for many years to solve the difficulty ; but, like a man in miry clay, the greater efforts I make, the deeper I sink in perplexity ; and it only tends to prove to my satisfaction, that very often, when we talk about the origin of diseases, we know nothing about the matter.

These observations apply more particularly to the diseases of our country ; but with respect to that one called yellow fever, it appears to me, that we have abundance of evidence to believe in its foreign origin ; and that it is a disease *sui generis*, generated originally in tropical climates, and oftentimes brought into, and propagated under favourable circumstances in the United States. And I believe it requires a peculiar constitution of atmosphere, as a pabulum to support the contagion, and render it capable of reproduction : this peculiar condition is, I believe, found in sea vessels, and about salt rivers, docks, &c. but not espe-

cially dependent upon the process of putrefaction, or any known or visible property of it; but whatever it may be, it is as tinder to the spark of fire; and whenever the imported contagious principle comes in contact with it, the fire is kindled, the fever is lighted up, and its extent and duration will be commensurate with this peculiar constitution of the atmosphere to propagate it.

Laying aside every other consideration, there is one strong fact that proves the yellow fever totally different in its nature from our country fevers; and which, duly considered, will put the matter in dispute forever at rest. It is, that frost destroys the yellow fever root and branch, on its first approach; whereas, the fevers of our country, even the most violent of them, as the typhus, the angina maligna, and spotted fevers, not only continue into, and through the winter, but oftentimes are rendered much more malignant and fatal by this circumstance.

IV.

A Case *of* Carotid Aneurism *successfully treated: Communicated to Dr. David Hosack, by* Wright Post, *Professor of Anatomy and Surgery, in the University of the State of New-York.*

Peter Thomas, a black man, born in the West-Indies, aged thirty-five years, was admitted into the New-York hospital, January 5, 1813, with an aneurism of the carotid artery, situated immediately under, and in contact with, the angle of the jaw on the right side.

The first symptom of this disease, which was a pulsatory sensation, was felt in March, 1812; but no swelling was at that time visible. Soon after, on examination, a small tu-

mour was perceptible, which increased very gradually in size, till about the beginning of November. Until this period the progress of the tumour was unattended with pain. It now began to enlarge more rapidly, accompanied by a throbbing sensation in the head, and occasional attacks of vertigo.

Previous to his admission into the hospital, he had been once bled from the arm, and blisters had been applied to the tumour, by a practitioner who appears to have been unacquainted with the complaint.

The habit of the man was full and robust, and he had never laboured under any severe indisposition. His occupation, for a considerable period before the discovery of his complaint, was that of a labourer attending upon masons; and in this capacity he was frequently obliged to carry heavy loads upon his shoulders; and was often employed at work with his head in a depending position.

The dimensions of the tumour, at the time of his admission into the hospital, were as follows,

Length, ...	$6\frac{1}{8}$ inches.
Breadth, ...	4
Height, or projection, of the tumour from the neck,	2
Half circumference of the tumour,	$8\frac{1}{4}$

His pulse being strong and full, sixteen ounces of blood were directed to be taken from the arm, and on the following morning a purgative of sulph. sod. was administered; and he was ordered to use low diet. These means had the effect of diminishing arterial action in a considerable degree.

On the seventh of January, at a consultation of the physicians and surgeons of the hospital, it was agreed that the operation of tying the carotid artery afforded the only hope of safety in this case. The patient acquiescing in this decision, I performed the operation on the 9th, at twelve o'clock.

An external incision was made, about three inches in length, from the lower part of the tumour to within a small

distance of the clavicle, which exposed the inner margin of the sterno-mastoid muscle. The dissection was continued through the cellular texture intervening between that muscle and the sterno-hyoideus, until the sheath containing the large vessels became apparent. This being opened sufficiently to expose the vessels, the artery was carefully separated from the vein and par vagum, and a ligature, armed with a needle, was passed under it by means of an eyed probe, bent to a suitable curvature for that purpose.* This ligature was firmly tied; and another, introduced in a similar manner, was secured about three quarters of an inch above it.† The needle with which the first ligature was armed, was then passed through the coats of the artery, and the ligature tied in the manner recommended by Mr. Cline, Jun. The artery was then divided

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* The artery was found to be of a size considerably larger than usual, and its coats of greater thickness. Is this to be attributed to a distension of the artery arising from the difficulty of transmitting the blood through the aneurismal portion of the vessel, or to a change of structure from the aneurismal disposition extending throughout the carotid? In ascribing it to the former cause, I am supported by a similar effect having been produced on the crural artery, in a case of aneurism occasioned by the puncture of that vessel, which came under my care some years ago, and was successfully treated by adopting the mode of operating which is now in general use. The aneurism here, it will be remarked, did not arise from a diseased artery. But the artery above the aneurismal tumour, in this case, was not only to the feel before the operation considerably enlarged, but on the exposure of it for the application of the ligature, it was really so by an augmentation of at least one third of its diameter. To this explanation, however, may be opposed what takes place in other instances, where a *diminution* of capacity is the consequence of a difficult transmission of blood through an artery. Another case of femoral aneurism of the spontaneous kind, at the operation for which I was present, is in illustration of this fact. (See Dr. Hosack's case of Femoral Aneurism in the Amer. Med. & Phil. Reg. vol. iii. p. 40.) In this instance the artery, after its exposure, was scarcely perceptible by its pulsation, and it was evidently lessened in its size.

† Should it be asked here why both ligatures were not passed under the artery at the same time, as is commonly done, I answer, because in this case there was some difficulty in detaching completely the artery from its connexion posteriorly, owing to the artery being at a greater distance from the external surface than usual, and which was occasioned by the mastoid muscle being thrown considerably forward

with the bistoury. The lips of the wound were then brought into contact, and retained by strips of adhesive plaster, and a light covering of lint, kept in its place by another strip of plaster, was all the dressing that was deemed proper. Immediately after the first ligature was applied, the pulsation in the aneurism entirely ceased; but in a short time, when attentively examined, a pulsatory motion could be obscurely felt.

About three minutes after the ligature was applied, it was remarked that the pulse at the wrist indicated a sudden diminution, both of frequency and force in the action of the heart. In five minutes, however, it regained its usual standard. At this period, too, the patient complained of a pressing, or sense of weight on the right inferior extremity, and his right arm seemed relaxed and incapable of motion. The disappearance of these symptoms, however, was simultaneous with the revival of the energy of the circulation.

Three o'clock, P. M. The patient complains of oppression about the upper part of the chest, and of a pain in the right side of the head, although not as before, of the throbbing kind. He feels chilly, and his feet are cold. Skin generally of the natural temperature. Pulse seventy-two, small and feeble. Let him take a draught of aq. acet. ammon. half an ounce, and tinct. opii. lxx.; have warm applications to his

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by the large size of the aneurismal tumour, which had insinuated itself partly under this muscle at its upper portion; and I was the less solicitous to effect an entire separation at the time, from an idea that such a degree of dissection only was necessary as would allow of an easy application of the ligature, and that when this main object would be accomplished, any farther detachment of the artery might be worse than useless; as it might possibly deprive the artery of that supply of blood which is necessary for that due adhesion of its coats, upon which the success of the operation depends. The same practice, I find, of having the artery attached at its under surface, has been adopted by others, as well to preserve a due circulation in the coats of the artery, as from an idea that the cellular membrane which connects the artery to the surrounding parts, might assist in preventing the ligature from being forced off the artery.

feet, and drink freely of tepid barley water. Six o'clock, P. M. Oppression at the breast relieved. Complains still of pain in the right side of the head, and soreness in the wound. Skin natural, and pulse full and distinct. Ten o'clock, P. M. The pain in the right side of the head continues; feels otherwise very comfortable. Temperature of the skin rather increased. Pulse seventy, full, and soft.

January 10th, ten o'clock, A. M. Complains of no pain or uneasiness, except in the head. Has slept very well during the latter part of the night. Skin natural. Pulse seventy-six, regular, and full. Let him be bled to xij. ounces. Four o'clock, P. M. Pulse eighty, and full: other symptoms much the same. Ten o'clock, P. M. Pulse eighty-four, strong, full, with some degree of hardness. Skin dry and heated. Tongue covered with a white fur. Complains of no pain. Ten ounces of blood was taken from the arm; and he was directed to continue his tepid drinks.

January 11th. Has no pain; but speaks of a stiffness and uneasiness about the throat. Pulse eighty six, and of moderate strength. He enjoyed several hours of sleep during the latter part of the night. No alvine evacuation since the operation. Let him take tart. pot. and sod. in divided doses, till the required effect is produced. Ten o'clock, P. M. The purgative has operated freely. Pulse eighty-six. Skin heated.

January 12th. The patient early this morning, after an attack of coughing, was affected with syncope; in which state he remained several minutes; on reviving, he complained of uneasy sensations about the throat, attended with a difficulty of ejecting the excretions of the fauces. Skin cold, and covered with a copious perspiration. Pulse very frequent and feeble, and he appeared much exhausted. He was this day directed to have a more nourishing diet. The tumour does not appear as prominent as before; it has a harden-

ed feel, and the pulsation is very obscure. Ten o'clock, P. M. Pulse ninety-four, moderately full, and strong. Skin heated, but moist. Feels no pain, except in the wound.

January 13th. Has passed a comfortable night. Pulse ninety, and soft. Skin natural. He is troubled occasionally with fits of coughing, which produce pain in the throat; and this is more severely felt when he makes the effort to throw off the secreted matter from the fauces and trachea. To allay the irritation about the throat, and obviate the cough, he is directed to take tinct. opii. ten grains, in solut. glycyrrh, half an ounce, every two hours. The agitation of the parts in the vicinity of the wound, occasioned by the cough, had now destroyed the union which had in the first instance taken place; and this was the more readily effected, as the distance to which the mastoid muscle was thrown from its natural situation, by the aneurismal tumour, rendered it difficult to keep the surfaces of the wound in contact: suppuration beginning to take place from the whole surface of the wound. Let the sides of the wound be kept as near each other as is practicable, by strips of adhesive plaster, and covered lightly with simple dressings. Pulsation in the tumour almost imperceptible. Ten o'clock, P. M. Pulse ninety. Skin heated.

January 14th. Patient quite tranquil. Pulse eighty-four. Cough less troublesome. Bowels costive. Let him have the purgative repeated.

January 15th. Has passed a restless night, on account of the cough, and a pain in the right side of the head. He is, however, much better to-day. Pulse and skin natural. The wound has a healthy appearance, and suppuration is completely established.

January 16th. Slept very little last night. Let him have an anodyne of tinct. opii xl. drops, to-night.

January 17th. The patient rested well last night. His cough is still troublesome, attended with pain in the lower

part of the throat. The surface of the wound is covered with florid granulations, and the discharge is healthy. Let his anodyne be repeated to night, if necessary.

January 18th. No material alteration in the state of the patient. He took a saline cathartic with the desired effect. The anodyne to be repeated at night.

January 19th. The discharge from the wound is rather bloody, owing, probably, to the paroxysms of coughing, which still harass him.

January 20th. The patient rested unusually well last night. He complains of no pain; and the cough is much better. The discharge from the wound is again good, and the granulations are vigorous.

January 22. Cough less troublesome. The nitrate of silver was used as an escharotic to the wound.

The dimensions of the tumour, as measured to-day, were as follows:

Length, ...	$5\frac{3}{4}$ inches
Breadth, ...	$3\frac{1}{2}$
Projection, ...	2
Half circumference, ...	$7\frac{3}{4}$

Pulsation still perceptible.

January 24th. The upper ligature came away with the dressings. The caustic was again applied.

January 26th. The lower ligature came away. The sore has contracted to a small size, and discharges but little.

January 28th. The patient rested ill last night. He complains of headache, and of a soreness in the tumour, which seems more tense than usual. His cough still remains, but in a mitigated degree. Ordered sulph. sod. one ounce, and a more spare diet.

January 30th. Feels considerably better.

February 2d. Complains of no pain whatever. General health good. The wound nearly healed. Pulsation in the

tumour not perceptible, except at one point, which is softer than at any other part, and it is here very indistinct. The size of the tumour this day was as follows :

Length, ...	$4\frac{3}{4}$ inches
Breadth, ...	$3\frac{1}{4}$
Projection, ...	$1\frac{3}{4}$
Half circumference less than .	$7\frac{1}{2}$

February 4th. There is some inflammation and soreness about the wound, and he complains much of headache. Pulse and skin natural. Bowels regular. An emollient poultice was directed to be applied to the wound and part adjacent.

February 7th. The pain and soreness have ceased since the application of the poultice.

February 13th. Since the last report, has occasionally been troubled at night with a throbbing pain in the head. Upon lying down, he remarked also a singing sensation in the left ear. These symptoms were relieved by the exhibition of a saline purgative, and by maintaining his head in a more elevated position while sleeping. He, to day, complains of soreness about the wound and lower part of the tumour, which has not sensibly decreased in size since the last admeasurement. Pulse, skin, and bowels in a natural condition. He was directed to have the cataplasm again applied.

February 22d. No soreness about the tumour. A small sinus, half an inch in depth, discovered where the operation was performed. He complains yet of occasional throbbing in the head, and there is a point near the lower part of the tumour, particularly soft and prominent, at which an obscure pulsation can still be felt.

February 26th. The sinus still continuing, and showing no disposition to heal, ordered the following as an injection.

℞. Sulph. zinc.	xvj. grains.
Aq. font.	viij. ounces. m.

The measurement of the tumour this day, afforded the following result :

Length, ...	$4\frac{3}{4}$ inches.
Breadth, ...	3
Projection, ...	$1\frac{1}{2}$
Half circumference, ...	$6\frac{3}{4}$

March 4th. No material alteration. Let the following be used as an injection, instead of the former.

℞. Sulph. cupri.	half a drachm
Aq. font.	iv. ounces. m.

March 11th. The strength of the injection was increased to the addition of x. grains of the sulph. cupri.

March 23d. The sinus has contracted considerably. The size of the tumour this day, was as follows :

Length, ...	$4\frac{1}{4}$ inches.
Breadth, ...	$2\frac{3}{4}$
Projection, ...	$1\frac{1}{2}$
Half circumference, ...	$6\frac{1}{2}$

A few days after this period the sinus healed, and the man made no complaint of any pain or other indisposition. He continued in the hospital till May 17th, when he was discharged.

June 5th. He called on me. I did not measure the tumour ; but judging from the appearance of it to the eye, there was an evident diminution of size, especially about the upper part ; and the whole seemed to occupy a place lower in the neck. The pulsation was now no longer discoverable.

About the last of June I accidentally met the patient again. The tumour, in point of size, had not very evidently altered. But there was a very manifest difference in the situation of it ; and of this, the patient himself was sensible ; for he observed that the motion of the head forward, was impeded by the pressure of the tumour upon the clavicle ; and there was now a considerable space between the tumour and

the base of the jaw. Another circumstance too, rendered the fact obvious, which was, the cicatrix having apparently risen upon the surface of the tumour.

From this period to the 3d of September, I heard nothing from our patient. He this day called on me, after having lost, that morning, according to his statement, two quarts of blood, in consequence of the bursting of the aneurismal tumour. His account of what had happened to him since the latter end of June, was, that soon after he last saw me, the tumour began to enlarge and grow painful, and that it continued to increase till the rupture of it took place. Under these circumstances, I advised him to go again into the hospital, which he assented to, and the following occurrences are reported by the house surgeon.

September 3d. The tumour nearly twice as large as at the time of the operation, tense, and painful to the touch. The lint and bandage which had been applied to stop the bleeding, were not removed.

September 4th. Another small opening appeared behind the first one, from which was discharged a small quantity of pus mixed with blood.

September 5th. The dressing which had been applied to the first opening to check the hemorrhage, was this morning removed, without any discharge of blood succeeding.

September 10th. He lost about four ounces of blood from the ulcerated surface. The size of the tumour is not perceptibly diminished. An obscure pulsation is discoverable at two points. He complains of some difficulty in swallowing.

September 14th. The tumour appears rather smaller, and is not so tense and painful; the opening is increased from ulceration of the integuments, and the discharge is of a dark colour and fœtid. Pulsation is now to be felt only at one point, and is very obscure.

September 20th. No pulsation can be perceived. The quantity and fœtor of the discharge increased. A probe introduced into the posterior opening, passes easily to the bottom of the sac.

September 23d. He complains of a throbbing pain in the head and tumour; the tumour very painful upon pressure, and is attended with an unusual degree of heat. Pulse full and frequent. A saline purgative and low diet was prescribed, which relieved these symptoms.

September 24th. To correct the fœtor of the discharge, as well as to change the disposition of the part, a yest poultice was applied.

September 25th. A profuse hæmorrhage occurred this afternoon, and before it was stopped he lost upward of two quarts of blood. This bleeding was checked by pressure made with dry sponge and bandage. This dressing was not removed till it was loosened by the copious discharge.

October 1st. No material change has taken place since the last report.

October 8th. The tumour is increased in size, is extremely painful to the touch, and very tense. He complains of great difficulty in swallowing and in breathing. He has some fever. The poultice was again applied.

October 11th. He is much better. The tension and size of the tumour diminished.

October 20th. The size of the tumour is rapidly diminishing. Let the poultice be omitted.

October 22d. This morning at 4 o'clock, a hemorrhage again occurred, and he lost thirty ounces of blood. By this, and his former losses of blood, he was much debilitated. His pulse was scarcely perceptible; tremulous, and occasionally intermittent. Rest, in a recumbent posture, was strictly enjoined.

October 25th. His pulse continues feeble and frequent, though he is considerably better.

October 29th. He is rapidly recovering from his debility, and is again enabled to take his usual exercise about the house. Portions of coagulated blood are discharged, with an increased quantity of the dark coloured matter before mentioned. His pulse still small, but not so frequent.

November 1st. He complains of much pain in the tumour, particularly upon pressure. Let the yest poultice be applied.

November 3d. The size of the tumour very much diminished since the last report, and not so painful. The discharge extremely copious.

November 7th. The tumour has decreased one third since the application of the poultice on the first of the month.

November 20th. The whole contents of the sac appear to be discharged, and healthy granulations are seen rising from the bottom. Let the poultice be omitted, and dress with dry lint.

November 22d. Complains of some pain in the part, which seems to be a little inflamed. Let an emollient poultice be applied.

November 24th. The inflammatory symptoms are entirely removed. Discontinue the poultice, and dress with lint as before.

November 26th. The wound much contracted, but the granulations appear rather unhealthy; the lint which was applied to them was directed to be wetted with a solution of the sulphate of copper.

From this period there was a gradual amendment till about the middle of December, when he was discharged from the Hospital, in every respect perfectly well.

January 1, 1814.

V.

OBSERVATIONS *on the* YELLOW FEVER *of Virginia, with some* REMARKS *on Dr.* JOHN MITCHELL'S *Account of the Disease; in a letter from the late* CADWALLADER COLDEN, *Esq. of New-York, to the late Dr.* JOHN MITCHELL, *of Virginia, dated*

Coldenham, June 8th, 1745.

Sir,

WHEN Mr. Franklin * favoured me with a sight of your treatise on the yellow fever, I was obliged to go from home, and to be absent for some time; and being scrupulous of detaining it, or of taking any copy of it without leave, I thought myself obliged to return it without having time to consider it, otherwise than cursorily, not doubting but that I would soon have the pleasure of seeing it in print. The pleasure I then had in reading it, was the only cause of making the remarks I then sent to Mr. Franklin, from a desire that you might have every hint that I could suggest to make your performance more perfect.

I have for many years declined the practice of physic, and any thoughts I now entertain on that subject, are only by the way of amusement, to fill up a vacant hour in a solitary part of the country; and for this reason you can expect little else from me than mere speculations, and which must always give place to that knowledge which arises from accurate and judicious observation. What I then wrote was in an evening while I was abroad, deprived of company and conversation, and had no time to revise what I had wrote, but left it with

* Afterwards Dr. Franklin.

my son (a boy) to copy from my extempore scrawl, and to forward to Mr. Franklin. After I have told you this, you will the more readily believe that I did not expect so much notice to be taken of it as you have done. All that I expected was, that from these hints you would re-examine, and perhaps alter some expressions, which I thought might lead the ignorant or unwary into mistake.

Now, sir, the manner which you have taken to answer the objections which I had made, is so much to my heart, that I think myself happy in having given occasion to it; for it gives me hopes of an epistolary correspondence with Dr. Mitchell, who, (though I do not otherwise know him than by the papers Mr. Franklin transmitted to me) has gained that love and esteem, which candour and knowledge can only procure. I can promise you very little in return for the pleasure I hope from you, if you will favour me with correspondence by Mr. Franklin's means, but that I will very cheerfully serve your curiosity in every thing that is in my power.

After this I promise never to make so long a preamble, and shall begin to treat you with that philosophic freedom, which I would desire of you and all my friends on the like occasion.

I must repeat what I wrote in the paper to Mr. Franklin, that I have never seen any ill of the yellow fever, and hope I never shall, and therefore I can only speak speculatively of that distemper. When you wrote of the inflammation of the stomach, which, as you observe, (and I believe truly) is a constant concomitant of this distemper, I would advise you to distinguish it, in the most express terms, from a genuine inflammation; for if by any means it be mistaken for a genuine inflammation, such as in a pleurisy, or the inflammation of the stomach in the proper sense, it will unavoidably give occasion to dangerous mistakes in practice. If I have any notion of this distemper, (and the clearest conceptions that I have been

able to form of it are from your writings) this is far from an inflammation in the proper sense of the word, arising originally from a stagnation of the globular parts of the blood in the capillaries, but it is such a kind of inflammation as is occasioned by burning or corrosive humours applied to the parts; all your observations lead me to think so; and if this be the case, it requires a very different method of cure from that of inflammations, in the proper sense of the word.

I am still of opinion, that the inflammation and gangrene succeeding it, are entirely occasioned by an extraordinary acrimony in the bile, which has its first rise in the serous or lymphatic humours, (for I distinguish them,) and that from this acrimony, and the solution of the bile as a consequence of it, the icterus or yellow colour ensues, and indeed all the most terrible symptoms of the disease.

I readily agree, that purging by lenitives may be useful in some cases, in the winter season especially, as likewise bleeding, and this chiefly in the spring; for the same is observed in the small pox and measles. But may I be allowed to ask whether these lenitives may not act as topical applications to correct the acrimony of the bile, and to defend the coats of the stomach from it? For in the cure of these most terrible symptoms, I should expect something considerable from topical applications, such as immediately correct or blunt this acrimony, or defend the parts from it without stopping the perspiration of the volatile fiery parts by perspiration. I still must advise, to prevent mistakes in the ignorant or unwary, that the most express terms be used to signify that all evacuations, (except of the fiery parts by insensible perspiration) before the crisis of this distemper (as in the small pox and measles) are against the general rules of cure; and that however in any particular cases they may be necessary, that these are only exceptions to the general rule, occasioned by the particular circumstances of these cases.

I am far from thinking that sudorifics may with safety be used at any time in this or such like distempers. No: I take it to be a dangerous practice. I am of opinion that all fevers, but in a more particular manner contagious fevers, require a certain degree of velocity to be kept up within certain limits, if too slow or languid, or too high or rapid, that the noxious matter may separate at the proper distance, so as to be thrown off through the skin at the crisis, either by sweat or more insensible perspiration. If the velocity be too small, the noxious matter separates in the glands, whose excretories empty into the intestine and within the body, and whose juices are of animal use, and designed to re-enter the circulation. But if the velocity be too great, then no separation of the noxious matter can be made, and it is for this reason that untimely and hot sudorifics throw all into confusion. The fevers require a certain period for separating and concocting the noxious matter; the want of attention to this, and the impatience to have a speedy cure, I am afraid has undone many. The period required in every kind of fever, can only be learned by observation, and likewise the limits of the velocity necessary for the separation, and concoctions afterwards of the noxious matter. This period and degree of velocity in the same distemper, is different in different climates, seasons, and constitutions, and therefore require a constant, accurate, and judicious observation.

In my opinion, the generally safe method of regulating the velocity in these malignant fevers, is not by evacuations, but by giving vent to the fiery particles by a *free perspiration*, and by such means as do not add fuel to the fire; and for this purpose diluents, impregnated with mild attenuants, and with such medicine as, from observation, have some specific virtue in correcting the acrimony of the juices, and to dispose them to concoction, have from the observation of most writers been most in use. At the same time special care must be

taken of the atmosphere which immediately surrounds the sick, as to heat and moisture; for it is impossible without this care to preserve a free perspiration; and as this is not always in our power, for this reason, as well as others, a cure is not in the physician's power. The tar water (if credit may be given to Dr. Berkeley's observation) seems to promise as much for these purposes as any thing I know; as all balsams are known to be attenuants, and to preserve from that particular acrimony which produces corruption and gangrenes, and the water impregnated with tar, is able to pass every where, and to reach the utmost recesses. It has still the further advantage of no way offending the stomach, nor does it heat or increase the fever, but allays it and thirst. These properties have been confirmed to me by some few observations which I have made, and therefore I cannot forbear recommending it to further experiment.

What you observe, sir, of the use of purging after the crisis, I am persuaded, is a very useful observation, and probably ought constantly to be done, as in the small pox, and more especially in the measles. Neither do I in the least blame your practice of purging in the beginning, by lenitives in the winter, or bleeding in the spring, or of using either of them at other seasons, in particular constitutions or emergencies; for all these are found useful in the small pox, though every one knows that the crisis is by a quite different method. All I mean is, that this practice be set forth with sufficient caution to others, who have not your skill and prudence; and you know how necessary such caution is to the practitioners in America.

Notwithstanding of my writing my opinion so largely, I believe that you and I agree in our sentiments on these diseases; but as I was exceedingly pleased with your performance, I am very desirous that you would omit nothing to make it as perfect as possible, and I submit it entirely to your judgment what I have now wrote, because your knowledge, aris-

ing from observation, is upon a much surer foundation than mine; and I most earnestly entreat of you, that you will no longer deprive me of the pleasure, and the public of the benefit of your treatise.

I am, Sir, your most humble servant,

CADWALLADER COLDEN.

VI.

Additional Observations on the Yellow Fever *of Virginia; addressed to* Benjamin Franklin, *by the late Dr.* John Mitchell, *F. R. S.* &c.*

In the short account of the yellow fever, which I left with you at Philadelphia, I have not endeavoured to establish any theory, or even to make any deductions from any established theory of that, or like diseases; but have only delivered a few matters of fact, as they occurred to me in practice, (which are chiefly or only such as I thought were either new or not well confirmed and known before,) as a foundation to build a theory upon, and on which to deduce a rational cure of this disease; and it is such which I humbly conceive may be most pertinent to the laudable designs of your society, of promoting rather than repeating the knowledge of the arts and sciences; nor have I either health or leisure at present,

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* In the former part of this volume we inserted entire Dr. Mitchell's Account of the Yellow Fever of Virginia. By the publication of the present additional observations, the public are in possession of all the writings of this distinguished philosopher on this interesting subject. These observations, it seems, were intended by the author to be presented to a society for the promotion of useful knowledge, at that time existing in Philadelphia, and which afterwards was reorganized under the name of the American Philosophical Society. By a reference to the Register, vol. II. p. 203, the reader will find a copy of the original letter, relative to the formation of this society, addressed to the late Dr. Colden by Dr. Franklin.

to deduce any theory or particular applications of it, from these *data;* however, I am glad to see myself so well prevented in this by your worthy colleague, Dr. Colden, as far as relates to malignant fevers in general, in this paper which you favoured me with. But as all diseases are generally attended with some peculiar and distinguishing symptoms, whereby they differ very materially from those of the same general denomination, especially in their cure, so I shall mention the concomitants of this disease, which seem to distinguish it as much from other malignant and pestilential fevers, and are to be had as much regard to in the cure, as the eruption of pustles in the measles or small pox, or of carbuncle and buboes in the plague; for beside the general affections of the solids and fluids, we must likewise have particular regard to the symptoms which they produce in the cure of diseases.

The first of these concomitants of our yellow fever, which is so material to be regarded, is an inflammation of the stomach, or liver, or both, with the adjacent parts. This appears not only from dissections, but from all outward symptoms or appearances of the disease, to be a most constant and aggravating circumstance of it; inasmuch that I never knew any one to die in this disease, without manifest tokens of this inflammation of the stomach or adjacent parts: this, as well as the inflammation of other *viscera*, generally of the brain, it is true, sometimes happens in other fevers of this class, but not so constantly, and almost surely, as in this. The next appearance of our malignant, or rather pestilential fever, as it may be called, which ought to be regarded, is an icterus, or yellow effusion. This, it is true, has imposed upon some so far as to make them take this symptom for a cause; to take this nominal, for the real essence of the disease; whereby they reckon this fever to be entirely of the bilious kind; but it would be equally wrong, and of as bad consequence almost, in practice, to have no regard to this most fatal appearance in

the disease, as to deduce its nature solely from thence. These two constant concomitants of the disease, wherever it is severe and mortal, joined to the general state of the fluids, which is very well explained by Dr. Colden, may give us a good idea of this disease, and point out the several indications of cure. The principal of these indications, which has been so well explained by many, is sweating, or at least promoting a constant *diaphoresis*, well known to be necessary in all malignant fevers. But, alas! it is much easier to propose a general method, than to perform a cure, when we come to practice; for that accurate observer, *Sydenham*, tells us, that the method which will prove successful in one year, (not to mention particular cases) will be prejudicial in another. Thus, in the years 1737 and 1741, when this disease was epidemic in *Virginia*, the sick could not be made to sweat in the winter and spring seasons; at least, not so plentifully as was necessary to check the violence of the fever, and avert the impending inflammation; which, indeed, is very often the case, when this distemper is very severe; for you must observe, that it differs as much in degree, at different times, as the measles or small-pox does. All heating sudorifics, in these cases, bring on the inflammation, and hasten on the gangrenous state of the *viscera;* and plentiful bleeding (which I have known to be urged by some in these urging occasions) causes a no less fatal dissolution of the fluids, or mortal debility, both which are but too well known in practice, and are easily deduced from the theory of these diseases. It is upon such occasions, as you may perceive, that I recommend purging in this disease, agreeably to the practice of all physicians who have had any considerable experience in it; for there are no parts, through which the lymphatic humours (which, as Dr. Colden justly observes, are the principal seat of this distemper,) go off with more ease

and more freely, than through the glands of the *primæ viæ*. Helvet. Anim. Econ.

Another advantage, and even necessity of purging, is obvious to be perceived from the necessity of cleansing the *primæ viæ* of their feculent and corruptible contents, which is of great service, when they come to be so severely affected. When this alone is indicated, by purging it may be done without any danger of driving the humours to the bowels; for the action of lenitives is no more to be referred to purgation, than the washing of the skin is to be referred to the action of sudorifics. *Pitcairn. Dissertat. de Febr. curat.* But it is very certain, what Dr. Colden rightly inculcates, that purging in this disease, requires much medical skill and prudence, (as well as most other applications in it,) and ought not to be rashly attempted; for which reason I have been more particular in explaining the reasons of it, and wish I had leisure to be as particular in delivering the practical observations which confirm and illustrate this part of practice, and the cautions requisite in it; but in general it might be observed, that it is rather out of necessity than choice, that we have recourse to purging before, or rather, at the decline of this disease. But on the decline it is so necessary that I never knew the yellow effusion to be carried off, except in one single instance, without a purge; the reason of which appears to be the viscidity of the bile, which occasions this icterus, which cannot pass off by other outlets. Dr. Colden desires to know, if any recover after purging without sweats? I can inform him, that sometimes they do, although sweats are the most general critical evacuations of all fevers. But the miasmata of contagious fevers, seem to be so subtile, that when they are disengaged from the more viscid humours, they make their escape insensibly through the pores of the skin and other parts; by which you may see some recover suddenly and surprisingly, without the least perceptible evacuation.

As to the relapse, which Dr. Colden thinks may proceed from the sick being exposed to the cold air after the fever, you must observe, that this was not an accidental, but a constant circumstance of the disease, at least at four times, when it has been epidemic in Virginia, and as much to be expected, as the return of an intermittent fever at its stated periods, whenever care was not properly taken to prevent it. What seemed to aggravate it most, was a too plentiful or gross diet. I imagined it might proceed from some lentor of the fluids, not removed nor evacuated, on account of the extreme debility of the body, which might afford, as it were, a *nidus*, for the subtile contagious vapours; in the same manner as some people, who have a great fluidity of their humours, and free execretions, never contract any contagious disease; whilst others, whose fluids are more viscid, can hardly avoid it, and suffer most severely from them.

P. S. What I understand by the lymphatic humours being affected in this disease, is chiefly a morbid acrimony of all the serous parts of the blood, which dissolves or assimilates the globular part of the blood, whenever the circulation is languid. *Qu.* Whether the contagious vapour, which affects the blood in this manner, is not derived from the internal, rather than the external, surface of the body? and whether the affections of the bile and liver, do not proceed originally from the same cause or minera of disease: since most of the blood which is carried to the liver, and from which the bile is secerned, proceeds from the stomach, intestines, pancreas, &c. by the venæ portarum, very different from the other veins of the body? and whether this may not make discharges from the internal surface of the body more necessary than in like diseases of the malignant kind: since, in this fever, the morbid humours not only proceed from thence in all probability, but likewise fix there; whilst in others of the eruptive kind, as they generally are, they are thrown on the external surface?

VII.

Observations *on the* Febrile Diseases *of Savannah; in a Letter to Dr.* Hosack, *from* John Le Conte, *Esq. Dated,*

Woodmanston, December 18, 1809.

Sir,

I lost no time on my arrival at Savannah, in making the necessary inquiries relative to the fevers of this country; the result of these follow. It was with extreme difficulty I could obtain what information I have. Most of the physicians seem averse to speaking on the subject; and what I now communicate, is chiefly derived from former observation, and from a physician of the same way of thinking as yourself. For an answer to your two first queries, I must refer you to an account of the climate and situation of Savannah, already given in the Medical Repository, by Dr. White.

The sickly season in this country usually commences about the latter end of August, or the beginning of September, and continues through the whole of the ensuing month. Although strangers, particulary Europeans, are liable to fall victims to the unhealthiness of the climate before that time, yet this is seldom the case with the natives, their constitutions being more accustomed to the extreme heat of the weather during those months; for it must be observed, that the temperature of the air does not begin to moderate until much later in the year. The disorders most prevalent during the period before stated, are intermittents of every kind, from those of the most simple, to those of the most compound type. These sometimes run into each other, so that a patient may be seized with a tertian, which in a few days will change to a quotidian, a double tertian, or a tertian in

the form of a quotidian; and not unfrequently end in typhus. This was particularly the case this autumn; but whether from neglect, improper treatment, or some peculiar state of the atmosphere, I am unable to say. The typhus fever, as a primary disease, very seldom occurs. They have besides these, another fever, commonly called *yellow fever*, but which, I have no doubt from its symptoms and history, you will pronounce to be nothing but the bilious fever.* I pass over any thing more that may be said on the subject of our intermittents, as I know your chief attention is directed to the other disease. When a patient is first seized, he complains of great lassitude and anxiety; headache, generally confined to the forehead and temples; not unfrequently of soreness of the flesh and bones; pain in the back, extending from the neck through the whole length of the spine; the same sensations in the legs as are experienced after severe labour, or excessive exercise; pains in the loins, stomach, breast, or spleen. These symptoms are three or four days making their approach; in others, they are hurried through in as many hours; the fever comes on, and the unhappy sufferer dies in the space of twenty-four hours. Should he not be attacked so violently, the fever commences with a vomiting of green, yellow, or black bile, in large quantities, and very offensive to the smell. After this, it increases, attended with a full, hard, and frequent pulse, from ninety to one hundred and twenty in a minute; intolerable thirst, some delirium, and a regular remission every day; the stomach being much disordered, and the pains that were before felt, still continuing.

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* The reader will find a very interesting communication on the fevers of the southern states by Dr. Norcom, published in the Register, vol. 1. p. 17. Dr. Norcom properly discriminates between the ordinary fever which attacks the native, and the more malignant form of the same disease under which strangers, not habituated to the climate, suffer. Hence this disease is justly considered as materially different from the yellow fever of tropical climates.—Ed.

As the disorder gradually approaches its crisis, the skin and eyes become yellow; the tongue is covered with a furred coat, tinged in the middle, of the same colour with the skin. In some the eyes are a little bloodshot, but never so much as to be called inflamed; hemorrhages never occur. At the end of ten, twelve, or fourteen days, the patient either recovers or dies; but death is never attended by real black vomit. I heard of one case, in which the patient vomited up a black flaky substance, resembling coffee grounds; but as he afterwards recovered, it was found, on inquiry, that the night before his attack with fever, he had been engaged in a drunken frolick, and had received a severe blow in his right side: the substance therefore voided from his stomach was nothing but coagulated blood.

The method of cure that proves most successful, is that which you yourself adopt in the same disease at New-York. The bowels are first cleansed by emetics and gentle cathartics; and afterwards such medicines as tend to promote perspiration and lessen the violence of the fever, are administered. Bark, either by itself, or compounded with other tonics, is, I believe, seldom used, except when the patient is convalescent; and bleeding, unless it be in such small quantities only as will relieve the headache, is generally thought prejudicial. If the fever is not so violent as to prove fatal in a few hours, it is easily subdued. The fondness which many physicians have for mercury and profuse bleeding, probably destroys more than the disease would were it left to itself; hence by many it is looked upon as more dreadful than it really is. This is the substance of what I have learnt on this subject; should it give you the satisfaction you wish, I shall be highly pleased, and more than paid for any trouble it has cost me.

Yours, &c.

JOHN LE CONTE.



Dr. Elihu H. Smith.

VIII.

Sketch *of the Life and Character of the late Dr.* Elihu Hubbard Smith, *of New-York.*

(With an Engraving.)

Elihu Hubbard Smith was a native of Litchfield, in Connecticut, and was born in the year 1771. Having received the rudiments of knowledge at a school in Litchfield, he entered the college of New-Haven, at the early age of eleven. At this distinguished seat of learning he gave many proofs of intellectual energy, far beyond those we are accustomed to observe in one of so unripe an age. He completed his education under the particular care of the Rev. Dr. *Timothy Dwight,* who then presided over an academy of distinguished reputation at Greenfield, and who, upon the death of the Rev. Dr. Stiles, succeeded to the presidency of Yale College. In 1786, Mr. Smith received the degree of A. B. from the college of New-Haven. He now returned to Litchfield, and under the direction of his father, a practitioner of physic, commenced the study of medicine. In the year 1791, he resorted to Philadelphia for the purpose of attending the several courses of medical instruction delivered in that city. After this period, in 1792, he chose as his residence, Wethersfield, in Connecticut, where he entered upon the practical duties of his profession. In this place, however, much as he was respected and esteemed for his social and moral virtues, he found but little employment as physician, and consequently, in the autumn of 1793, removed to the city of New-York, where he remained until his death, in 1798.

In New-York he devoted himself with great ardour to his medical pursuits, and by his perseverance and attention,

gradually surmounted those obstacles to professional success which naturally arose from his youth, and the limited number of his acquaintance. But beside those branches of science more immediately connected with the medical profession, he cultivated with great industry almost every department of literature. His genius as a poet unfolded itself at an early age, and among the poetical productions of his juvenile pen are not a few which manifest considerable vigour of imagination, and an easy flow of numbers.

In the year 1796, the governors of the New-York Hospital elected him one of the physicians of that extensive charity, the duties of which station he discharged much to the benefit of that institution, and to the increase of his own reputation. In this year appeared his first production on a subject strictly medical, viz. "Letters to William Buel, Physician, Sheffield, Mass. on the Fever which prevailed in New-York in 1795." These letters were written at the request and for the information of Dr. Buel, and though not originally intended for the press, were at the suggestion of some friends of the author published in the "Collection of Papers on the subject of Bilious Fevers prevalent in the United States," edited by N. Webster, Esq. Shortly after this period, Dr. Smith, in conjunction with Dr. Samuel L. Mitchill, and the late Dr. Edward Miller,* projected the publication of the New-York "Medical Repository." From the establishment of a periodical journal of this kind, in the infant state of medical and physical science in this country, he anticipated numerous important advantages to the profession of medicine and the collateral branches of knowledge; and as he was one of the most active promoters of the design, he zealously devoted the chief part of his attention to its successful accomplishment.

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* See the life of Dr. Miller; Register, vol. 3. p. 1—8.

The chief of his writings in the Medical Repository are, his History of the Plague of Athens, vol. 1. p. 1—32; Case of Mania, successfully treated by Mercury, do. p. 174—178; Observations on the Origin of the Pestilential Fever which prevailed in the island of Grenada in the years 1793 and 1794, do. p. 459—486; On a singular Disease with which infants are sometimes affected, do. p. 501—504; The Natural History of the Elk, vol. 2. p. 168—174; On the Pestilential Diseases which appeared in the Athenian, Carthagenian, and Roman armies, in the neighbourhood of Syracuse, do. p. 367—384.

Beside the medical productions in the Repository, he published Edwin and Angelina, or the Banditti, an opera in three acts, 8vo. 1797; and in 1798, a Discourse delivered before the New-York Manumission Society, 8vo. The same year he undertook the office of editor of an American edition of Darwin's Botanic Garden; and to evince his respect for the author of this celebrated poem, he prefixed to the volume a poetic address, happily describing the rise, progress, and use of the art of printing as connected with science, and particularly its effects in spreading this botanic song from Britain to the remotest corner of the new hemisphere. This beautiful address is retained in the second American edition of the Botanic Garden, published in 1807. Beside these miscellaneous productions, he is supposed to be the author of "Andre, a tragedy in five acts, performed in New-York, March, 1798."

While thus actively employed in the discharge of the important duties of his profession, and in the cultivation of the various branches of knowledge which elevate and adorn the human character, he, in the month of September of 1798, when only in the 27th year of his age, was attacked with the yellow fever, then prevailing with great mortality in the city of New-York, to which disease he soon fell a victim. In a

communication to Dr. David Hosack, Dr. Mitchill, one of the surviving friends and colleagues of Dr. Smith, thus describes his last illness:

"During the warm season of that pestilential year, Elihu H. Smith and myself had been associated in performing our respective duties as physicians of the New-York Hospital. We had frequent conferences on the periodical work in which he, Edward Miller, and myself, with the co-operation of Messrs. T. and J. Swords, had become engaged. We had both been favoured with fine health, and had been sustained in full enjoyment of our powers, while the prevailing distemper was destroying lives at an unusual rate around us. We had more than once observed how remarkably well we felt; and when strangers and visiters called upon us, how entirely we were capacitated to receive them and enjoy their society.

"Among these was the accomplished and elegant Scandella.* In the difficulty which had arisen about procuring a

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* The following tribute to the memory of this amiable and excellent man, extracted from the Medical Repository, may with propriety be introduced in this place.

"Died, Sept. 16, 1798, I. B. Scandella, M. D. aged 28. The fate of this gentleman was, in a remarkable degree, to be lamented. He was a native of the Venetian State. His family was opulent and high in rank. He had received the best medical education, but had consecrated his faculties to the general improvement of science, and the benefit of mankind.

"Having resided for some time at London, in the capacity of Secretary to the Venetian Embassy, he conceived the design of visiting America. His country's service no longer demanding his attention, he proposed to gratify a liberal curiosity in surveying the principles and structure of a rising empire.

"He first arrived at Quebec, and thence took various journeys through the southern and western districts. His personal merits secured him the esteem of the persons among us most eminent for their knowledge and talents. His candour and blameless deportment made him be regarded with peculiar tenderness by all who knew him. His chief attention was directed to agricultural improvements and projects, justly conceiving that mankind would derive most benefit from the perfection of this art.

"Having spent two years in this country, and accomplished the purposes which brought him hither, he embarked for Europe in June, 1798. The vessel proving

lodging, this amiable gentleman apprehended some serious inconvenience. In the ardour of his friendship, Smith asked him to his own house; his distemper proved to be the reigning epidemic. It was one of the most obstinate, rapid, and indomitable cases. It advanced with such speed, that there was time but for a few visits. On the day that I called last to see Scandella, I found him overpowered by the disease, and lying a corpse upon the bed.

"This was affecting enough; but my solicitude was exceedingly increased by learning that Smith had been sick since the preceding afternoon. He was confined to his bed in an adjoining chamber, and was wholly ignorant of the fate of Scandella. On entering the room, I roused him from the drowsy state in which he lay. I opened the inner shutters of the window, for the purpose of admitting a little more light. It was early on Sunday morning. I inquired how he was, and received for answer, (a frequent one in those days) that he was not very unwell, and would be better by-and-by. I saw, however, in a glance, enough to satisfy me, that the disorder had already made alarming progress. The suffusion of his face, and the inflamed and glassy eye, were unequivocal symptoms of danger. But when he inquired of me if it was not almost sundown, and thereby showed that he had lost the reckoning of time, I perceived that the coherence of his

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unfit for the voyage, he returned to Philadelphia, the port from which he had set out. Shortly after he came to New-York, and engaged a passage in a packet which was speedily to sail from this harbour. The detention of his baggage, which was daily expected from Philadelphia, occasioned him the loss of this opportunity. An epidemical disease had meanwhile made its appearance in both cities. Notwithstanding its greater progress and malignity in the latter city, his concern in the welfare of a helpless family, whom his departure had deprived of their only useful friend, induced him to return thither. After enduring the continual loss of rest, and exposing himself to the influence of an infected atmosphere for ten days, he set out on his return to New-York. He had scarcely arrived before symptoms of disease appeared, which, on the sixth day, terminated in death."

mind was broken. I soon withdrew, and pronounced my apprehensions for his safety. His friend, Mr. Johnson, caused him to be immediately removed from Pine-street to his house in Greenwich-street, and every possible comfort to be administered. There Miller joined me in devising the course of treatment for our invaluable friend. There was but a remnant of time left. Smith expressed to us a desire to have the mercurial practice tried upon himself. We instantly agreed to it. Some of the strongest ointment was procured, and a nurse from the hospital was permitted to gratify her feelings, by applying it with her own hands. This task the faithful woman performed so well, that she salivated herself. But so implacable and inveterate was the disease, that the quicksilver produced no sensible operation whatever upon the patient. Black vomiting, with universal yellowness came on, and he sunk under a malady which nothing could even mitigate or retard.

"He was interred in the ground of the presbyterian church in Wall-street, very near the spot in which another of my valuable friends, William Pitt Smith, had been buried. Miller, Johnson, and myself, with a very few others, were all that could be found, on that day of mortality and dismay, to follow his hearse."

We shall not in this place discuss the particular merits or defects of Dr. Smith's writings. The most esteemed of his miscellaneous productions, is his Epistle to Dr. Darwin, written in the style of that poetical philosopher and physician. Of his writings strictly medical, his Letters on the Yellow Fever which prevailed in New-York, afford a favourable specimen. He was the advocate for the domestic origin and non-contagious nature of this disease, and, from a full persuasion of the correctness of his opinions, was zealous in the support of them. An examination of the facts and reasonings upon which this opinion was maintained, we at this

time purposely forbear. It was natural to expect, that the limited experience which, at that day, the practitioners of the United States possessed, relative to that epidemic, would lead many, and particularly one of the ardent mind of Dr. Smith, into erroneous opinions concerning its peculiar character, which time and repeated observation would correct. His observations on the origin of the pestilential fever of Grenada, in which he has attempted to invalidate and overthrow the account of that disorder, as published by Dr. Chisholm, it must, on all hands, be admitted, betray an irritability of temper, and a want of respect to the distinguished character of his opponent, incompatible with that line of conduct which ought ever to characterize philosophical controversy. But it is due to truth to remark, that Dr. Smith was inadvertently led into errors, founded upon the information, and arising from the malevolent instigation of a member of the council of Bulama; and that although he paid the debt to nature before he had an opportunity to retract the censures he had passed upon Dr. Chisholm, yet the surviving editors of the Repository, acquiescing in the disinterestedness of Dr. Chisholm's motives, candidly admitted the truth of his statements.*

His histories of the Athenian Plague, and of the pestilential diseases which appeared in the Athenian, Carthagenian, and Roman armies, we have already in part examined.†

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* "Dr. Chisholm indignantly repels the censure passed on his conduct; and, in doing this, he manifests the warmth of conscious integrity, and the irritation of offended honour. As it was never our wish to criminate the motives of that gentleman, we observe, with pleasure, the explanations offered in his defence. And we think ourselves authorized thus publicly and explicitly to apply the language of retraction, which our deceased friend had pledged himself to employ, when he declared, "I shall be as ready to withdraw the censures that I have passed upon him, should he convince me that they are unmerited, as I have been free to advance them; and in a manner equally public." See Med. Repos. vol. 2. p. 285.

† See the Register, vol. 3. p. 54—65.

Though the author's particular views, as to the nature of these diseases, is always before us, we need no other evidence than these histories to convince us that his diligence, activity, and perseverance knew no common bounds, and that, at his early age, he had explored a great extent of medical learning. His History of the Native American Elk, is a specimen of the accuracy with which he described natural objects; of the promptness with which he seized opportunities, and of the learning which he diffused around the subject of his inquiry.

In announcing the death of Dr. Smith, the surviving editors of the Medical Repository thus speak:

"As a physician, his loss is irreparable. He had explored, at his early age, an extent of medical learning, for which the longest lives are seldom found sufficient." "The love of science and the impulse of philanthropy directed his whole professional career, and left little room for the calculations of emolument. He had formed vast designs of medical improvement, which embraced the whole family of mankind, was animated by the soul of benevolence, and aspired after every object of a liberal and a dignified ambition. He was ripe for the highest honours of his profession; his merits were every day becoming more conspicuous, and nothing but his premature fate deprived him of that extraordinary degree of public confidence which awaited a longer continuance of his life."

In the Eulogy on the late Dr. Rush, delivered by Professor Mitchill, on the 8th of May, 1813, before the College of Physicians and Surgeons, in the University, New-York, the epistolary intercourse of Dr. Rush with Dr. Smith and Dr. Miller, is mentioned as one of the happy incidents of his life.

The orator then proceeded to say, "Of these two persons, thus brought to my recollection, permit me, learned associates, to make the mention which friendship inspires.

With them both, I enjoyed that virtuous and intellectual intercourse which renders an acquaintance delightful. The former possessed a mind of such rare and exquisite finish, a temper so adapted to the social condition, and a manner so delicate and refined, that few of his cotemporaries could rival him. With a diligence that left him few lost moments to regret; a method which placed every thing he knew exactly where it ought to be, and an application of his talents to do all the good in his power, he was an ornament to the time in which he lived. Difficult, indeed, would it be to find such another!

"The latter, also, my companion and fellow labourer in undertakings which, to ourselves at least, seemed useful and advantageous, was endowed with uncommon qualities. His head was a treasury of information; his heart a mine of beneficence. With a rich fund of learning, and a capacity to turn that acquirement to the best account, he shone to great advantage in the most polished circles. His professional career, both in his public capacity, and in his private walks, was the subject of such commendation, that the calls to service were almost incessant. When such excellence, with all the mildness and benignity which adorned it, was summoned away, it is no wonder that the city felt a disposition to mourn!"

REVIEW.

ART. I. REPORT, *in part, of* SAMUEL L. MITCHILL, M. D. *Professor of Natural History, &c. on the* FISHES *of New-York.* New-York. D. Carlisle. 18mo. pp. 28. 1814.

SINCE the settlement of this country, two hundred years ago, there has been no proper description of the fishes of New-York. Our land animals, our plants, and particularly our birds, have attracted a due degree of attention; and so, indeed, have our minerals. But the inhabitants of our waters, who afford so much pastime to the angler, so much profit to the fisherman, and so much food to every class of citizens, are almost wholly unknown to the scientific world.

Singular as this fact may appear, it is a truth no less remarkable, that the number, variety, and excellence of the New-York fishes is surpassed, perhaps, by no market whatever. In the systematic books of Europe, it is very uncommon to find New-York quoted as the native place of a single fish! Through a want of correct description and specifications, a considerable proportion of the fishes inhabiting our rivers, bays, and streams, may be considered as nondescripts, and wholly unknown to naturalists and the learned.

Very lately, however, Samuel L. Mitchill, our Professor of Natural History, &c. has undertaken to reduce our ichthyology to certainty and system. He has proceeded by examining the fresh specimens, and describing their natural characters. The common names by which the fishes were called, seemed, in the greater part of instances, to mislead.

Many of the species, too, were not known by any appellation, and had been heretofore surveyed cursorily as strange and singular creatures. A great deal remained to be done, and to perform it well, every article must be examined *de novo*, and by itself.

A Report, in part, by Dr. *Mitchill*, on *the Fishes of New-York*, came from the press, as we learn, on January 1, 1814. We possess one of the few copies which the author caused to be printed. This Report contains about seventy species, and yet he observes that it is but the beginning of his attempt. Of these enumerated species, fifty are stated as having been described from nature; fifty-four are represented as being fit for the food of man; and nearly forty are supposed not to have been noticed, or not intelligibly so, in *the general or particular histories of Fishes*, that have been published. The author has, consequently, been obliged to add classification to his description. He has accordingly invented as many *specific* names as the novel species rendered necessary.

But in going through this difficult task, Dr. M. has been obliged to do more than designate the species of fishes. He has found it necessary to constitute several new *genera*. For example; finding that our exquisite *blackfish*, with his *four varieties*, and his congener, the elegant little *begal*, could not be conveniently disposed of under any existing families, he formed a new generic term by latinizing the aboriginal name of tautòg, and thus gave them the title of TAUTÒGA So, being unable to arrange our noble *rockfish* or *striped basse*, and his associate, the curious *weakfish*, among any other genera already extant, he has proposed a new one, which he denominates ROCCUS, by as small a departure as possible from one of the popular epithets. In like manner, discovering that four species of fishes, called *perches* in our market, had none of the characters of the PERCA; and

feeling a disinclination to place them under the ill-defined and uncertain genus of LABRUS, already overloaded with species, he has proposed to distinguish them by the name of MORONE. Lastly, to a very hard-featured fish, bought by him, on Nov. 4th, 1813, and which he could not make out to be a *salmo*, nor an *esox*, nor any of the other voracious species, and which was remarkable for an enormous mouth armed with a prodigious number of sharp teeth, he has applied the term STOMADON, from the Greek words στόμα, mouth, and ὀδοὺς, ὀδόντος, teeth.—(See *Report*, p. 12.)

We are gratified in learning, that the author perseveres in the work he has so auspiciously begun. A considerable number of additional species have been already described since the first manuscript was put to press, and of those, several have the incident of novelty. The cold and ice of winter will unavoidably retard the progress of this interesting work. But with the approach of warm weather, and the arrival of the migrating tribes, there will be the means of rapid acceleration.

There is thus a prospect of possessing, not only a good catalogue of our fishes, but a faithful description of them. To this we hope there may be added, in due season, correct delineations and figures. Then every naturalist may possess his book of reference; every sportsman may carry in his pocket, the manual of diversion; each traveller who visits the stalls may compare the natural specimens with the pages of instruction; each person at a distance may gratify his curiosity, by perusing a genuine and original document; and every housekeeper, who carves for his family, will fully comprehend the subject before him.

ART. II. REPORT *of the Committee appointed by the Medical Society of the County of Saratoga, to investigate the Nature and Causes of the late* EPIDEMIC, *as it prevailed in this county, together with the most successful modes of practice in the same. Published by order of the Society.* Waterford. Charles Webster. 12mo. pp. 12. 1813.

THE disease concerning which the present pamphlet is published, has already received a considerable share of attention in the different volumes of the Register. Our opinions relative to its peculiar character; the method of treatment which has been found most successful, and the principles upon which it ought to be conducted, it is therefore unnecessary, on this occasion, again to state. We have only to remark, that this interesting Report abounds in facts directly in support of the opinions which have been uniformly maintained in the Register; and if any thing were wanting to demonstrate still further the absurdity of those speculations which have been offered in support of the *exclusively bilious* nature of this disorder, that this candid and impartial essay of the Medical Society of Saratoga has furnished it.

It appears from the communications of different practitioners, received by the society, that at least four thousand cases of this epidemic have occurred in the county of Saratoga. The extensive opportunity which was thus afforded for deducing correct practical results as to the character of this disease stamp with peculiar value the present performance. Our readers cannot but be gratified with the following copious extract.

" Although physicians who have written upon the epidemic, have from some of its prominent symptoms derived names for it, yet

none of those names fully express its character, as it has appeared with us. We therefore take the liberty of calling it the *Bilious Pneumonia*, from its being generally attended with an inflammation of the lungs, and in the last stage with an increased morbid secretion of bile.

" The bilious pneumonia became epidemic in some towns in this county, early in December, 1812, in most others, in January, 1813. In one or two, however, agreeably to reports received, it did not appear earlier than the first of February. A number of sporadic cases appeared in different parts of the country in the latter part of October and in November, but it could not, from its frequency, or its power of converting other diseases into itself, be properly styled epidemic in any place, earlier than December.

" It was preceded, in the eastern part of the county, by bilious intermittent and remittent fevers, diarrhœas, dysenteries, and other complaints, arising from marsh miasma. In the western division of the county, typhus and inflammatory fevers prevailed in addition to the above.

" The first stage commences with a cold chill, which has sometimes lasted from four, to twenty-four hours, or longer, but it generally continues from thirty minutes to two hours. This chill, which differs not essentially (except in the severity of the ague) from those which commonly precede pneumonia, is accompanied with coldness of the extremities.

" During the continuance of the chill, the patient is generally afflicted with a violent pain in the head, back, loins, and some part of the thorax. It sometimes at the first extends to the limbs, resembling acute rheumatism; at other times to the bowels, resembling enteritis. The pain in most instances becomes fixed in some portion of the membranes of the lungs. Some physicians have stated that it is most frequently in the right side; others say in the left, and others as frequently in the one side as the other. Respiration is laborious and difficult, frequently attended with acute pain, or a sense of suffocation. The eye is watery and red, the tongue covered with a thin white pellicle, frequently tinged with yellow near the root. Some cases are noticed in which the tongue was of a fiery red

without any pellicle, but generally moist in the first days of the complaint. The patient is racked with a cough, which is at first dry and suffocating, but soon becomes harsh and deep, raising a thin tenacious mucus; on the third or fourth day the matter expectorated becomes thicker, less tenacious, and frequently striped or mixed with blood. During the cold stage the pulse is weak, small, and in some instances, where the chill continued long, imperceptible at the wrist. After the commencement of the hot stage, the pulse becomes small and oppressed, causing that sensation in the finger which is frequent in severe peripneumonia, beating between seventy and a hundred strokes in a minute. The patient feels a great anxiety and depression of spirits, but (agreeably to the report of a number of physicians) less muscular debility than is common in acute diseases. Many in the first days of the fever, who from vertigo are unable to sit up, in a recumbent position feel their strength but little impaired. There are two paroxysms of fever in twenty-four hours, that in the evening the highest. The patient restless and wakeful, often denied the refreshment of sleep till the crisis. Nausea is a common symptom, and vomiting a frequent one: the bowels on the first days of the fever for the most part are costive, the skin about the temperature common in peripneumonia, the face generally red and bloated, but in many cases pale and cadaverous.

"Second stage: when the fever did not terminate about the fifth or seventh day, by a favourable crisis, the following symptoms generally ensued; the pulse became full, soft, and weak, from ninety to one hundred and ten strokes in a minute, the tunica adnata of the eye and skin yellow, the tongue dry and coated with a dark brown, except in a few cases, where it was smooth and glazed, and of a dark red colour; heat and dryness of the skin much more considerable than in the former stage; the bowels swollen and elastic. Uncommonly large quantities of dark bile were discharged by the operation of emetics and cathartics.

"From about the first of February till the first of April, many cases of the fever in different parts of the county, as appears by the reports before us, ran a quick and rapid course, frequently pass-

ing through the first and second stage in a few hours, putting on the symptoms of the typhus gravior, in its most malignant form, and often proving mortal in four or five days.

"*Treatment.*—From the reports received we find that physicians differed considerably in their methods of treating the epidemic. Some placed almost their whole reliance on copious sweats, produced by external heat; others, on an early use of opium, wine, brandy, and the bark, in as large quantities as the stomach would retain; but far the greater number recommended venesection, emetics, cathartics, and diaphoretics; keeping the patient cool, and strictly adhering to the antiphlogistic regimen. But from the whole together, with our own observations in practice, we have thought proper to recommend the following, as the most successful mode of treatment in the fever as it appeared in December, January, April, May, June and July, and in a large majority of cases in February and March, except such as early put on symptoms of malignancy.

"First—If called before the cold chill is gone, we advise to shorten it as much as possible, which is in general easily effected by some gentle stimulant, internally given, and warmth externally applied. As soon as the fever rose, where the pulse would bear it, we bled moderately; which sometimes required repeating on the second day, very rarely on the third. The loss of twenty or thirty ounces of blood, generally removed the pneumonic symptoms as perfectly as sixty or seventy have done for several winters past. After the first bleeding, if the pain in the thorax was so far relieved as to render it safe, we administered a full dose of tartarized antimony and calomel, sufficient to cause a brisk operation as an emetic and cathartic; where this was thought dangerous, calomel per se, or combined with jalap or scammony was given. As soon as the operation was over, we applied warm fomentations of vinegar or spirits over the seat of pain, and gave diaphoretics, which seldom failed to relieve the pain and produce a free perspiration, rendering the symptoms mild, and leaving little for the physicians to do, more than to continue the perspiration, and by the use of pectorals to cause a free expectoration. The diaphoretic, most highly ap-

proved by a majority of those physicians who have reported, is a powder nearly similar to Dover's. As a pectoral, digitalis and radix scilli were very useful; vinum antim. and laudanum have also been highly recommended. Frequent and severe cathartics to cleanse the stomach and bowels are absolutely necessary in every stage of the disease. Happily we have it in our power to state, that physicians have generally agreed in the opinion, that uncommonly large doses of cathartics were necessary to produce an operation; that their frequent repetition was attended with happy effects; that external heat over the local pain was very serviceable; that epispastics after the inflammatory symptoms began to subside, applied immediately over the part affected, were very useful in removing the local pain; that calomel in small doses where the congestion of the vessels of the lungs or liver was considerable, was attended with its usual good effects; but that early in the disease, as it increased the stimulus without overcoming the morbid excitement, it was of little or no use, and in some cases injurious; that sweats from external heat in the forming stage of the fever, were often useful in throwing it off, and preventing it from running a course; that after the fever was fully formed they were generally pernicious; that they were never an indifferent remedy, always beneficial or injurious; that the latter was most frequently the case, as the fever advanced through its forming state too rapidly for their being used with safety; that hemlock, another popular remedy, was generally hurtful, and that should the fever again make its appearance on the approach of winter it cannot be too strictly prohibited, as it has unquestionably been the cause of many deaths. We have no report which approves the use of hemlock, cinchona, wine, or brandy, in the first stage of the fever, but they generally agree in recommending the antiphlogistic regimen and cathartics, and most of them the use of venesection and emetics.

"In the second or bilious stage of the epidemic, the physicians, as appears by their reports, are not so well agreed. A number, whose standings are very respectable, recommend, as soon as the inflammation subsides, to introduce the bark, opium, wine, and brandy as rapidly as the stomach will bear; to avoid cathartics, and to give

enemata to keep the bowels open. And from the success with which this practice was attended, they conclude their mode of treatment must be correct. Others, equally respectable, urge, that frequent cathartics and emetics, with a continuation of diaphoretics are all that is necessary in this stage of the fever, alleging that such has been the irritable state of the muscular fibres, that they will not bear the bark, colomba, or any other considerable tonic; that they with difficulty bear wine or brandy, especially the latter; that patients are found to recover fastest under a nutritious diet, and exercise in the open air.

"This difference may in part result from the different degrees of malignancy with which the epidemic has appeared in different districts. That the mortality has been much more considerable under the tonic and stimulating practice than under the other, cannot be denied, but this may arise from the early malignancy of the disease; for under those symptoms, every physician must acknowledge, far the greater portion of deaths have taken place, and that some malignant cases have baffled every effort of the physician under all the different methods of treatment of which we have heard.

"About the fifteenth or twentieth of January, many cases of the fever occurred where the pulse was so weak as to forbid the use of the lancet. This species of cases continued to increase till the close of the epidemic. Some physicians say one third, others, one fourth of the whole were of this description. In other respects they required the same treatment as other cases. It further appears, that in the months of February and March there were in many parts of the county various cases which ran rapidly through the inflammatory stage into one of a high state of malignancy, scarce inferior to the plague; attended with great muscular debility, cold chills, sometimes distressing ague, violent pain in the side, breast, head, or extremities, torpor on the surface, pulse sometimes small and hard, and often slow and irregular; the tongue in the first stage dry and white, in the last brown and dark, skin dry and hot, as in other malignant diseases, breathing difficult and laborious, and a hacking cough, expectorating matter, sometimes viscid and glary, at other times resembling blood and mucus agitated

together. In these cases the patient would not bear the loss of any blood. Equal parts of tartarized antimony and calomel were found to throw off large quantities of dark and fœtid bile. Friction with vinegar and Cayenne pepper, and the application of brandy and cantharides to the extremities, till perspiration was produced, were found to be serviceable. About the second or third day, brandy, and the diffusible stimulants became necessary, followed by the rad. serp. virg. senaka root, columbo, bark, quassia, &c. About the first of April, as above stated, the symptoms appeared far less malignant, and more readily yielded to medicine. By the last of that month the fever in some parts of the county disappeared. In May and the early part of June, cases of the fever prevailed in many places, but in July and August it generally lost its pneumonic symptoms. The diseases then became remittent and intermittent fevers, cholera morbus, dysenteries, and diarrhœas, which were more prevalent in those months than they have before been, within twelve or fourteen years in this county. An unusual number of these cases put on symptoms of malignancy, but the mortality has been probably less than one in one hundred.

"Your committee would further observe, that in our opinion, the epidemic is not a new disease. We have discovered no symptoms which are uncommon in those mixed fevers which occur in the fall, spring and winter, to which the system is predisposed by the absorption of marsh miasma, and of which that state of the atmosphere, which produces pneumonic inflammation, and cold externally applied, are the exciting causes. It has not been essentially different from those peripneumonies which visited us fifteen or twenty years since, except that cases of malignancy have been more frequent, and as far as we have been able to learn, it has yielded to the same modes of treatment. The greater malignancy of the epidemic may, probably, in part be attributed to the openness of the early part of the winter, and to the freedom of the ground from frost, till near the middle of January. Among the causes which produced such an astonishing mortality, we may include the alexirpharmic or sweating practice, which was so exceedingly popu-

lar with a great share of the people, that it was with great difficulty the physician could induce his patients to adopt the antiphlogistic regimen; the unfounded prejudices which some physicians entertained against the use of the lancet, and its too copious use by others. The former either wholly neglected the inflammatory stage, or relied too implicitly on cathartics, and the latter appear to have forgotten that the synochus would shortly terminate in a synocha or typhus, and would not bear the liberal evacuations which had been absolutely necessary for the last twelve years.

" Your committee are likewise fully of the opinion, that should the fever again appear, and physicians adopt the mode of treatment here prescribed, that instead of losing one patient in five, seven, or twenty-one, they would not lose one in sixty.

" It appears from the reports before us, that the fifth, seventh, and fourteenth days, were often critical. The crisis sometimes fell on the third day, rarely on the ninth, and some cases ran beyond the fourteenth day, which last gradually wore off without any perceptible crisis.

" Your committee have learned of but one case of dissection, which was performed so long after death, that no conclusion could be safely drawn from it. The fever during its continuance had, in common with other epidemics, the power of converting all other diseases into itself, unless we except a few cases of typhus mitior, which appeared in places where the epidemic was most rife and malignant. On reflection your committee are of the opinion, that these cases are merely a variety of the prevailing complaint. The following circumstances strengthen this opinion. Many of the cases even in the same towns, bore evident symptoms of the typhus gravior, and in the city of Albany, the typhoid tendency of the fever induced a respectable physician to call the epidemic the *peripneumonia typhodes.*

" In many parts of the country a rash or scarlatina mitis was prevalent from the last of December, till the first of April, which was infectious, but principally confined to children; it was so mild as hardly to require medical aid. In those cases which ran a

course of fever, the same symptoms were observed as in the epidemic, and the same method of treatment was required. The measles and pertusis were frequent in the latter part of winter, but neither of them were generally epidemic. The latter was uncommonly mortal, frequently in children terminating in the scrofula of the mesenteric glands. It is observable, that in the winter a great number of aged people died suddenly, without much previous disease, and that there was an unusual number of deaths from phthisis pulmonalis. The only domestic remedies used for the epidemic, which have come within our knowledge, are sweats from external heats and decoctions of hemlock internally given. Both of these, as we have before stated, were highly injurious. In many instances they occasioned a rapid progress of the fever into its most malignant state, which suddenly and unexpectedly terminated in death. Even where medical aid was called, soon after their use, it was exceedingly difficult to check the strong malignancy of the disease, and the patients slowly recovered, after a long and distressing course of fever. It is the unanimous opinion of your committee, that those remedies are extremely hazardous, and cannot be used with too much caution. They ought never to be administered, unless it be in the forming state of the fever, or for a mere cold. It is a duty which humanity requires of every medical man, to impress upon the minds of the people the extreme hazard of relying upon reports from abroad, with respect to the efficacy of medicines, in any disease; he ought to inform them that a disease scarcely ever retains the same character in different districts; that for a physician to be governed by these reports, or to prescribe to the name, rather than the symptoms of a complaint, is to render himself the follower of every stupid and tale-bearing empiric; and that medicine can never be useful when administered without a due regard to the predisposing causes of the fever, which must vary with every change of situation.

"It was the intention of your committee to have made some remarks on the theory of his wide-spread and destructive epidemic; but not having a sufficient number of facts on which they could form a complete history of the disease, they chose rather to state

such information as they have been able to obtain, with such remarks as the subject suggested, than to enter the barren field of theoretical controversy."

ART. III. *The* AMERICAN NEW DISPENSATORY: *containing General Principles of Pharmaceutic Chemistry; Chemical Analysis of the Articles of the Materia Medica; Pharmaceutic Operations; Materia Medica, including several new and valuable articles, the production of the United States; Preparations and Compositions. With an Appendix, and several useful tables. The whole compiled from the most approved authors, both European and American. By* JAMES THACHER, M. D. *Fellow of the American Academy of Arts and Sciences, and of the Massachusetts Medical Society, and Honorary Member of the Georgia Medical Society.* Second Edition. Boston. T. B. Wait and Co. and C. Williams. 8vo. pp. 732. 1813.

WHEN the American New Dispensatory was first presented to the public in 1810, it was contemplated by the author as an Essay to ascertain how far such an undertaking, having for its more immediate object the diffusing a knowledge of our indigenous vegetables, would be received and encouraged by the medical practitioners of the United States. Such has been the flattering reception which this undertaking received, that in little more than two years the whole impression of the original edition has been disposed of; and, encouraged by this unexpected patronage, Dr. Thacher has been induced to republish the work with many improvements.

Upon comparing the present with the former edition of this Dispensatory, the reader will find that the author has adhered to the arrangement which he originally adopted, and that the whole is divided into three parts: viz. first, the general principles of pharmaceutic chemistry; secondly, the classification of medicines and a view of the operation of medicines on the living system; thirdly, preparations and compositions. To these follows an Appendix, containing observations on mineral waters; on medical prescriptions; on the nature and medicinal uses of the gases; on medical electricity; on galvanism; an abridgment of Dr. Currie's Medical Reports on the use of cold water; on cold and warm bathing; and on the method of cultivating American opium; besides, tables, and a glossary of botanical terms.

It has frequently been remarked, that dispensatories and pharmacœpias present exact indexes of the progressive state of medical science, inasmuch as the alterations which they undergo, and the improvements they receive, correspond, in a very great degree, with the accessions which are made to medicine and the collateral branches of physical knowledge. The observation, we believe, will hold good, whether we advert to the time when the crude performances of Avicenna and Serapion were regarded as indubitable authority on the subject of pharmacy, or bear reference to a period near our own day, when the invaluable labours of the late learned and distinguished Dr. Lewis were communicated to the world. Notwithstanding the great alterations which have been made in works of this kind, and the numerous expurgations which the materia medica has undergone, particularly in late years, it must be admitted, that even the best English dispensatories are still in many respects encumbered with articles and preparations, either too trivial and inert to entitle them to consideration, or of a nature too uncertain or corrosive to justify the employment of them in practice.

But while we think that many substances might be rejected from the list of remedies as useless, still we would recommend the greatest caution in the exercise of this principle of rejection, lest we should indiscriminately throw away the good with the bad, the grain with the chaff.

Neither leisure nor disposition allows us, at the present time, minutely to examine how far the work before us is particularly entitled to commendation on account of the author having excluded a number of inactive, superfluous, and superstitious articles which have disfigured most of the preceding productions on the same branch of medical education. We, however, readily bear testimony to the great merit of his performance, and especially for the valuable and judicious matter which it embraces relative to the indigenous productions of this country. No region of the earth is more fertile and more valuable for the productions of its vegetable and mineral kingdoms than the United States, and every attempt made for the purpose of disclosing the native resources of this country, cannot fail to prove highly useful.

The following extract is taken from the preface to the second edition.

"A large proportion of every Materia Medica is derived from the vegetable kingdom, and the wise author of nature, who clothes the earth with rich productions, has probably furnished every climate with the most appropriate remedies for its own peculiar diseases; and in no country, perhaps, has the divine hand been more bountiful than in our own. Foreign drugs are not at all times to be procured, are always expensive, and not unfrequently sophisticated, and some of them less efficacious than remedies derived from our own soil.

"Some may be surprised that so few of our productions have been incorporated into medical catalogues; but this is not to be expected, until, by botanical research and inquiry, we attain a more

perfect knowledge of their virtues and properties. Of all the branches of our profession, medical botany and materia medica have been the least cultivated, and have made the slowest progress among men of science in New-England. Few subjects, therefore, can, at the present period, excite greater interest than a systematic investigation of the medical character and properties of our native productions, and assigning them their respective rank in the materia medica. Every thing invites and constrains to explore the recesses of the mountains and fields; for the earth is replete with riches. Let the cultivating hand of science be extended to bring into view the hidden treasures which have so long remained unenjoyed. If the native Indians possessed a knowledge of practical botany, and formed a materia medica of sufficient powers to fulfil their medical purposes, what may not be expected to result when theoretical and practical botany shall be combined with accurate experiments and observations under all the advantages of modern improvements?

A correct botanical arrangement of our medicinal vegetables, distinguishing the several species of foreign plants from those that are peculiarly American, would be of the greatest utility, as the means of obviating that confusion and embarrassment so frequently experienced from the application of English names to American plants. This presents an extensive and very profitable field, inviting young candidates for medical degrees to exercise their talents and display their taste and ingenuity. The subject is inexhaustible, and every judicious theme appertaining to it will be viewed as an important acquisition, honorary to the author, facilitating his own improvement, and contributing to the great object of fabricating an American Materia Medica."

For the very valuable additions to the Materia Medica which Dr. Thacher has presented in the New Dispensatory, he is indebted to his own experience, the communications of practitioners in different districts of the United States, the communications in the various American periodical jour-

nals, the inaugural exercises of American graduates in medicine, the Domestic Encyclopœdia, edited by Dr. Mease, the botanical account of indigenous vegetables, published by Dr. Cutler, of Boston, the Pharmacœpia of the Massachusetts Medical Society, and to the Collections towards a Materia Medica of the United States, published by Dr. Barton. These different sources of information are, doubtless, sufficiently authentic to justify the introduction of the different native remedies contained in the present work: yet it will not be denied, that our knowledge of many of them is still very imimperfect; that future experiments are requisite for the successful investigation of their nature, and that future experience must determine more particularly their peculiar medicinal character. While on this subject, we may remark, that the selection of the various American substances which Dr. T. has introduced into the New Dispensatory, is highly judicious; and that he has also given great additional value to it by the clearness, precision, and distinctness which he has observed when noticing different articles, and recommending them as remedies in different disorders, and in different stages of the same disease. Exceptions to this rule might, indeed, be pointed out. For the want of this indispensable caution in not specifying more particularly the various circumstances which govern the administration of medicines, as different in the causes, in the type, and in the stages of disease, the Collections towards a Materia Medica, by Dr. Barton, are wanting in requisites the most essential to their value, and are rendered comparatively useless.

But, without dwelling upon the character of the present work, we shall conclude with recommending it as a performance highly honourable to the author, and as eminently deserving the attention of the practitioners of the United States.

ART. IV. *The* PHILOSOPHY *of* EXPERIMENTAL CHEMISTRY. *In two volumes. By* JAMES CUTBUSH, *Professor of Chemistry, Mineralogy, and Natural Philosophy, in St. John's College, Philadelphia, President of the Columbian Chemical Society, &c. &c.* Philadelphia. Isaac Peirce. 12mo. Vol. 1. pp. 356. Vol. 2. pp. 338. 1813.

We are gratified with the appearance of the present work of Professor Cutbush. Though it does not appear to be particularly distinguished for any decided superiority over the common elementary works on chemistry heretofore published, it contains a large amount of the most important facts upon which chemical science is founded, with the recent discoveries and improvements which have given such interest to this branch of physical knowledge. The arrangement of the author's materials is sufficiently clear and perspicuous, and the whole, like the volumes of Accum, is rendered, in no small degree, subservient to the purposes of the operating chemist.

ART. V. REVIEW *of "An* ESSAY *on the Bilious Epidemic Fever, prevailing in the State of New-York, by* CHRISTOPHER C. YATES." *With additional remarks by* A PHYSICIAN. Albany. E. and E. Hosford. 8vo. pp. 44.

The design of the present pamphlet is to expose the errors in fact, and the absurdities in reasoning, contained in the

Essay published on the bilious epidemic fever which not long since prevailed in Albany. In the accomplishment of his object, the anonymous author appears to have been actuated by a sense of duty and humanity. We have read his strictures with advantage, and think the rod of correction deservedly and judiciously applied.

"I cannot omit this opportunity (says the author in his introductory remarks) of expressing my decided disapprobation of those medical journalists who review publications of this nature without exposing their prominent defects. This unmerited indulgence gives currency to error, and stamps imperfection with a degree of importance to which it never can be entitled."

A hint which we hope will not be lost upon some of our brother editors.

ART. VI. *The* ECLECTIC REPERTORY, *and Analytical Review, Medical and Philosophical. Edited by a* SOCIETY OF PHYSICIANS. Philadelphia. Thomas Dobson. 8vo. Vol. 1. pp. 536. Vol. 2. 535. Vol. 3. pp. 551.

The NEW ENGLAND JOURNAL *of Medicine and Surgery and the Collateral Branches of Science. Conducted by* a NUMBER OF PHYSICIANS. Boston. Bradford and Reed. 8vo. Vol. 1. pp. 434. Vol. 2. pp. 418.

The titles of these periodical journals are here introduced, not with the intention of entering into any review of their contents, but solely for the purpose of earnestly recommending them to the patronage of the members of an enlightened profession. The *Eclectic Repertory* of Philadel-

phia was commenced in October, 1810, and is now arrived at the beginning of the fourth volume. The *New-England Journal* has already completed its second annual volume. These works are published quarterly; are composed partly of original and partly of selected materials; and are conducted with great judgment and ability. The *original* papers are honourable to their respective authors, and are strikingly indicative of the improved state of medical literature in this country.

DOMESTIC INTELLIGENCE.

Case of Extirpation of the Uterus; extracted from a letter of Dr. Shecut, of Charleston, S. C. addressed to Samuel Bard, M. D. President of the College of Physicians and Surgeons of the University of New-York.

I avail myself of the present opportunity to give you a few outlines of the history of a *perversio uteri*, and the consequent excision of that *viscus*, which I did myself the pleasure of communicating in a paper to the Literary and Philosophical Society of South Carolina, at their last meeting, and which is referred to the medical department of said society. The history itself I now consider the property of the society, and it will probably be published among their transactions; but the importance of the case makes it, together with its novelty, desirable that its leading features be extensively circulated, since it is an instance which has been doubted by many, of the possibility of a female living without that organ.

The subject of the history is a Mrs. H——y, late a laundress of this city; many years a wife, the last six a widow; was never pregnant, though of tolerable good constitution. From an accident in the year 1806, she received a violent strain, which, according to the expression, appeared as if somewhat had torn asunder in the region of her loins, which was followed by a profuse *uterine hemorrhage*. This hemorrhage afterwards became periodical and troublesome, till about the year 1810, when a *procidentia*, or partial prolapsus, occurred, which was reduced in the common way, and by a pessary was prevented from increasing. In September,

1813, I was first called to consult on her case: on examination, &c. determined the case a *scirrhus uteri*. Her constitution was greatly impaired, and her stength exhausted. The decoction of bark acidulated with sulphuric acid, was prescribed, and lenient cathartics to keep the bowels soluble. The extract of datura stramonium was also given night and morning in half grain doses. Her health appeared to be gaining from this treatment considerable advantages, although the October period was marked by a slight hemorrhage; but on the 13th of November, having neglected her aperient medicine, she became very costive, and was seized with a nausea and uncommon desire to evacuate downwards. From these efforts a profuse *uterine hemorrhage* took place, and a considerable perversion of the organ, resembling the hour-glass contraction. The *vulva* had so completely choaked that viscus, whose *fundus* was now greatly distended, that it precluded the hope of success in the attempt at reduction. To restrain the hemorrhage, I gave pills consisting of two grains of opium with half a grain of the acetite of lead, one every hour or two. My attendance at this time was merely casual, she being then a patient of Dr. Doughty's; I was, however, solicited to do all I could. Finding my efforts to compress the protruded organ, so as to reduce it, in vain, I sent for Dr. Doughty, and called in my friend and preceptor, Doctor David Ramsay. However, before either of these gentlemen arrived, the patient had raised herself on the bed-vessel, and in straining to evacuate, propelled the whole body of the organ inverted into the vessel. She laid hold of it with her hand, and was in the act of drawing herself gently on the bed as I entered the room. I now considered her case desperate, and was of opinion that nothing but *excision* could afford a chance of her recovery. I however prepared a decoction of quercitron and chamomile, and applied warm flannels wrung out of the same to the tumour, and administered

an enema, by which time Dr. Ramsay arrived. On examination he confirmed my opinion, that *excision* was the only hope.

A consultation, consisting of Drs. Ramsay, Baron, sen. Glover, Denny, Doughty, and myself, took place shortly after; a diversity of opinion compelled an adjournment to the next day. A *sphacelus* had commenced about the *fundus uteri*, and the line of *demarcation* being evident, *excision instanter* was recommended; the patient earnestly requested a delay until the next morning. Every thing that could be done to favour the reduction of the tumour was still persisted in. On the morning of the 15th, a mortification had extended itself to the neck within the vagina, and *excision* was immediately performed,* by making a ligature as far within the vagina as was practicable; and with a probe-pointed bistoury, a circular excision half an inch below the ligature was made, without any loss of blood or sensible pain to the patient. In less than twenty-four hours the ligature cast off without any sensible effect. In nine days the patient was free from every symptom of disease, and is at this time a fine jolly, buxom widow of forty-three years! The tumour was cut through in various directions, was a solid mass; weight by computation five pounds, was eleven inches from the *fundus* in a direct line to the point of section, and from fifteen to eighteen inches circumference at its greatest diameter.

Extract of a Letter from Dr. David Hosack, to Dr. Thomas C. James, of Philadelphia, dated New-York, March 18th, 1811.

I will conclude this letter by stating to you, that on the first of February last I delivered a lady in this city, Mrs.

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* By Surgeon Joseph Glover.

C—, about twenty two years of age, who had not menstruated for nearly two years before her pregnancy. The suppression, which took place about eighteen months before her marriage, was the effect of cold, occasioned by getting her feet wet at the time her menses were flowing; but prior to that suppression, her catamenia had been regular, both as to quantity and the periods of their return. About six months before her marriage, she had a very small discharge of a blackish matter from the uterus; but so inconsiderable that she states it to have been a mere show. Since her marriage, which took place in October, 1809, she has not had the least return of her catamenia, either prior to, or since her pregnancy. Her labour was in all respects natural, without any extraordinary discharge after the separation of the placenta, which also came away spontaneously. The lochial discharge continued the usual period; and she makes an excellent nurse, having plenty of milk for her child. This fact, of her proving pregnant after two years absence of the catamenia, being very unusual, and contrary to the observations of the most respectable writers, I thought might prove interesting to you as a teacher of midwifery.

Cultivation of the Sugar Cane.

It appears that several of the opulent planters of the state of Georgia have directed their attention to the cultivation of the *Sugar Cane.* From the experiments already made, we are informed, on the authority of the Massachusetts Agricultural Repository and Journal, (no. 1. vol. 3.) it is already ascertained, that one acre of cane will yield sugar to the value of two thousand four hundred dollars, deducting the expense of cultivation, which is about four hundred dollars.

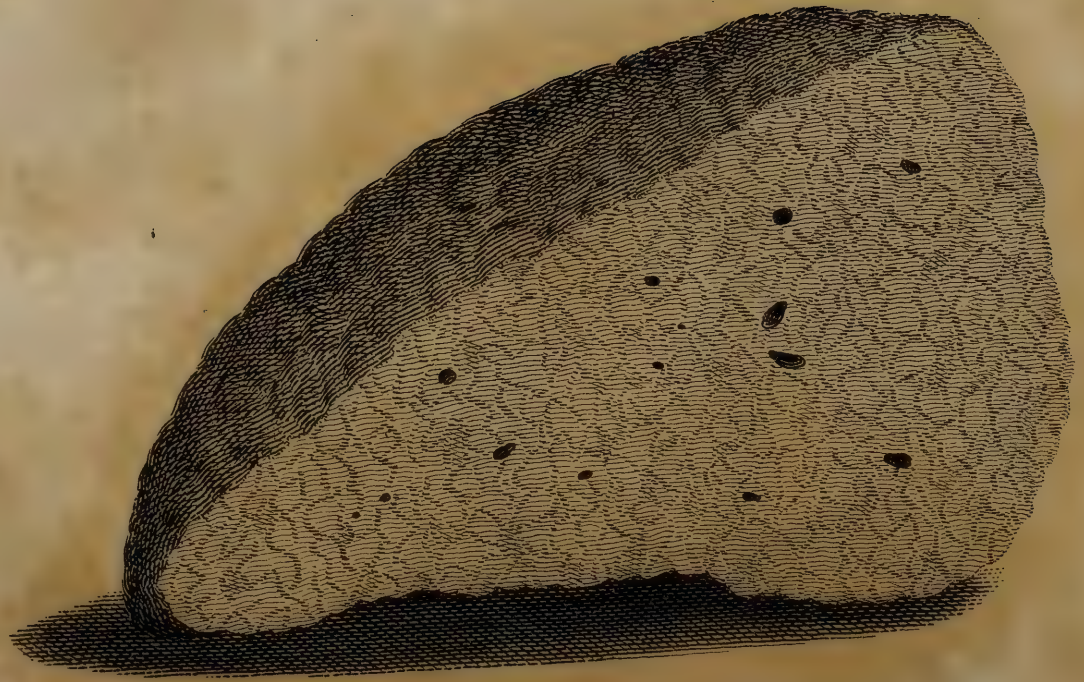
Case of Tuberculated Liver.

[The following extract, furnishing a brief notice of a dissection of a tuberculated Liver, is taken from a letter addressed to William Dunlap, Esq. by David Hosack, M. D. and published in Dunlap's Life of Cooke, vol. 2. The causes which induced such a morbid condition of that viscus, are equally well known as the professional eminence of the subject of it.]

(With an Engraving.)

"A few hours after his death, having obtained permission from Mrs. Cooke, accompanied by Dr. Francis, I examined the body, for the purpose of ascertaining the state of the abdominal viscera, and especially that of the liver. Upon opening the belly, we found it to contain about four quarts of water; but the liver, to our great surprise, did not exceed the usual dimensions of that viscus; it was, however, astonishingly hard, and of a much lighter colour than is natural to that organ; its texture, too, was uncommonly dense, making considerable resistance to the knife; in its internal structure it was so hard and unyielding, that very few traces of its vessels could be found, and the circulation through it had evidently long since ceased to be regularly performed: it exhibited precisely that peculiar *tuberculous* appearance which was first pointed out by Dr. Baillie of London, in his Morbid Anatomy.* It also deserves to be remarked, that in the case of Mr. Cooke, as in those described by the distinguished anatomist referred to, the tubercles were not confined to the surface, but extended throughout the greater part of the substance of the liver, as I ascertained by making several sections of it in different directions. The other viscera of the abdomen exhibited no departure from their natural condition, either in their structure or appearance."

* See Baillie's engravings, p. 101, 2.



Section of a Tuberculated Liver.

Observations on the Weather of the City of New-York for the months of October, November, and December, 1813.

OCTOBER.

The temperature of the weather for the month of October was such as we are accustomed to experience at this season; though upon the whole the number of cloudy days, and those on which rain fell, was greater than is generally observed. The highest degree of heat, as indicated by Fahrenheit's thermometer, was on the 27th, when the mercury stood at 7 A. M. at 57; at 3 P. M. at 65; and at 7 P. M. at 60: the lowest degree on the 12th, when it stood at 7 A. M. at 37; at 3 P. M. 46; at 7 P. M. at 42.* The greatest quantities of rain fell on the 1st, 2d, 7th, 15th, 16th, 17th, (accompanied with thunder) and 27th. The wind was not unfrequently from the southward; at other times N. E.

NOVEMBER.

The weather of this month was for the most part mild and pleasant. The thermometer frequently stood as high as 50, at 7 A. M.; at 3 P. M. at 58; and at 7 P. M. at 52 degrees. The lowest range of the thermometer for the whole day, was on the 15th, when the mercury stood, at 7 A. M. at 31; at 3 P. M. at 31; and at 7 P. M. at 30. We had a light fall of snow on the 12th and on the 14th, with wind from the N. and N. E. Rain fell on the 10th, 11th, 18th, 24th, and 25th.

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* According to the public papers, on the 12th of this month, snow fell at Sackett's Harbour (on Lake Ontario) one and an half foot deep.

DECEMBER.

The weather of December was considerably colder than that of the preceding month, there being many days during which the thermometer was many degrees below the freezing point. The mildest day was the 1st, when the mercury stood at 7 A. M. at 41; at 3 P. M. at 47; and at 7 P. M. at 43. The coldest day was the 21st, when it was at 7 A. M. at 20; at 3 P. M. at 26; and at 7 P. M. at 24 degrees. On the 25th, 27th, and 31st, the thermometer was at 25 degrees at 7 A. M. Rain fell on the 8th, 17th, 28th, and 29th. We had a considerable fall of snow on the 20th. Wind for the most part northerly.

Quarterly Report of the Diseases which prevailed in the city of New-York, during the months of October, November, and December, 1813

Cholera, diarrhœa, dysentery, intermitting, remitting, and *typhus fevers,* which usually prevail during the summer and first fall months, were continued throughout the month of October, when they resigned their place to the ordinary inflammatory complaints which have frequently been noticed in our quarterly reports of the diseases prevalent at this season of the year; and, as in former years, cases of the *bilious remittent fever* occasionally appeared even during the frosts of December; not so the effects of cold upon the other forms of fever, which have been so frequently and so absurdly identified with our indigenous remittent.

Among the phlegmasiæ of the last quarter, we have had occasion to see many cases of *rheumatism,* and that form of the same disease as it appears in fashionable life, the *gout.*

We denominate them forms or varieties of the same disease, believing them to be of the same inflammatory nature, and though differing frequently in the seat of the inflammation, and the causes which produce it, that they are to be treated by the same class of remedies. Various opinions divide physicians relative to the nature and origin of gout; as far as the author of these remarks has seen the various forms of this disease in the course of twenty years private practice, as well as in his attendance upon many of our public institutions, he has been led to the following conclusions upon this interesting subject:

1st. That gout is not an hereditary disease in the sense in which it is usually considered; that it is only hereditary as far as fortune, and its attendants, ease, indolence, luxury, habits of intemperance, both in eating and drinking, and that predisposition which arises from a strong aud vigorous constitution, are hereditary. Accordingly, it is observed by Hoffman, that "many have lost their gout with their fortunes," being compelled to obtain their subsistence by the sweat of their brow. Similar facts are related by Van Swieten* and Schenckius. Hence, too, females, who rarely indulge in the excesses either of the bottle or the table, are as rarely the subjects of this disease; and when they are so, it is usually after the cessation of the menses, and is then, for the most part, induced by the excessive use of wine or ardent spirits. The writer has also observed that in

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* Van Swieten mentions particularly the instance of "a certain priest who enjoyed a rich living, and had been an old and constant sufferer from the gout, but happening to be taken by the pirates of Barbary, he was kept constantly at work in the galleys for two years, which had this good effect, that afterwards, when he was ransomed from captivity, having lost all his troublesome and monstrous fatness, he never once had a fit though he lived several years after the event."—*Comm. ad aph.* 1255.

those families where it is pronounced to be hereditary, that it is uniformly earned by the descendant, and that it is not an exclusive patrimony : accordingly it happens that not only the females, but such of the male members of the same family, as lead lives of temperance and industry, escape the disease. For the same reason, gout never appears in early life, except when induced by indolence, intemperance and dissipation.

2d. That gout takes place for the most part in the sanguine temperament, in the plethoric habit of body, and is exclusively an inflammatory disease of the whole system, as well as of the part affected.

3d. That its associate or vicarious diseases, apoplexy, palsy, asthma, habitual catarrh, eruptions on the skin, obstructed viscera, and dropsy, arise from the same habit of body, and from the same causes.

4th. That the deposits of saline or earthy matter which take place upon the joints in gout and rheumatism, in the kidneys and bladder occasioning stone and gravel, in the brain of apoplectics, in the arteries of advanced life, in the coronary vessels, and valves of the heart, as frequently attendant upon angina pectoris and other diseases of that organ,* have the same common origin, and that these extravasations are usually the effects of an overloaded state of the blood vessels.

5th. That although the same earthy or saline materials exist in the blood in a state of health, and are constantly passing off in our excretions, as appears from the observations and experiments of Scheele, Woollaston, Brande, Pearson, and others, they are in no instances the cause of gout, but when deposited upon the joints in that disease, or upon other

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* See Warren's valuable work on the Diseases of the Heart.—See also Baillie's Morbid Anatomy.

parts of the body, that such deposits are the effects of plethora, the parent of both.

6th. That the *predisposing* causes of gout are the excessive use of wine, ardent spirits, animal food, the condiments of the table, and the neglect of the exercise necessary to counteract their effects upon the constitution. While the check of the excretions by the cold of autumn and winter, or the sudden impetus given to the circulation by the returning spring, prove the most usual exciting causes of this disease. Hence we find gout, like rheumatism and other inflammatory diseases, to be the attendants upon autumn, winter, and spring, but rarely to be met with during the summer season, when our diet consists of a large proportion of vegetable food, and the excretions, especially by the surface, are most abundant; hence, too, it is observed, that persons who are remarkable for their excessive discharges by the skin are rarely the subjects of gout, even though the usual causes of this disease are at the same time indulged in to a great degree.

7th. That, as the causes of gout are *intemperance* and *indolence*, the best means of preventing this disease may be summed up in their immediate antidotes, *temperance* and *exercise;* but where the patient has not resolution enough to withstand the temptations of the table, and is unable to take the necessary exercise, that occasional evacuations by the lancet, and other means of diminishing the fulness and excitement of the vessels, should be employed.

8th. That the most effectual means of removing the inflammatory action attendant upon the first stage of the paroxysm of gout, consist in depletion by the *lancet*, *cathartics*, and such remedies as operate by restoring the excretions from the surface of the body, the physician paying due regard in the use of these means to the constitution of the patient, his time of life, and season of the year.

That in correspondence with the use of these remedies, both the diet and the regimen of the patient should be simple and strictly antiphlogistic.

9th. That during the febrile stage of the paroxysm, the part or parts affected should be lightly covered with soft flannel or carded cotton, for the purpose of soothing the existing irritation, and of promoting a perspiration from their surface ; bu t that both the practice of loading the limb with the accustomed strata of flannel, and thereby of adding to the heat and inflammation of the parts, and that of applying cold water or other cold applications to the affected limb, are alike prejudicial and dangerous, and are equally to be reprobated.

10th. That at the termination of the febrile or inflammatory stage of gout, as after other inflammatory diseases, the same means of restoring the tone of the system are indicated, viz. chalybeates, bitters, the moderate use of animal food, wine, porter, exercise, and in the summer season, sea bathing.

The writer of this article is aware that the opinions he has expressed, both as to the exclusive inflammatory character of gout, and especially the mode of treatment he has advised, will be considered as heresies by physicians in general, as well as by their patients ; he would, however, observe, that the treatment recommended has not only been pursued in his own private practice with the most salutary effects, but that the use of blood-letting in particular, which it is his object to recommend in the treatment of gout, has long since been sanctioned by the truly respectable names of Sydenham, Huxham, Cullen, Musgrave, Macbride, Hamilton of Lynn, and our late distinguished countryman, Dr. Rush.

FOREIGN INTELLIGENCE.

Humboldt's Political View of New Spain.

The arrrival of a second volume of this splendid work, enables us to lay before our readers some curious information respecting the fever which reigns epidemically on the eastern coast of New Spain.

Vera Cruz is considered as the chief seat of the *vomito*, which is certainly the same disease with the yellow fever that has afflicted the inhabitants of the United States of America since 1793. Clavigero and other writers affirm, that it occurred for the first time in 1725; but M. Humboldt is of opinion, that yellow fever has occurred, sporadically, whenever persons born in a cold climate have been exposed, in the torrid zone, to air loaded with *miasmata*. In the sixteenth and seventeenth centuries, the mortality was probably much less than afterwards: 1st. Because the tropical part of America was only visited by the Portuguese and Spaniards, whose constitutions are less hurt by great heat than the inhabitants of more northern countries; 2d. The early colonists of the West-Indies were not collected into such populous towns; 3d. Because, after the discovery of the American continent, the Spaniards were less attracted by commerce to the warm and humid shores, and preferred the more temperate elevated plains of the interior. Panama and Nombre de Dios were at first the only ports in which, on certain occasions, there was a considerable concourse of strangers, and, as early as 1535, the former was a dangerous residence for Europeans, and the latter was abandoned in 1584. We must not confound the period when a

disease was first described with the date of its first appearance. The most ancient description of yellow fever, is by John Ferreyra de Rosa, a Portuguese physician, who observed the epidemic which prevailed at Olinda, in the Brazils, from 1687 to 1694, shortly after the Portuguese army had conquered Pernambuco. In 1691, it appeared in Barbadoes, and was called Kendall's fever; but there was no proof of its having been imported from Pernambuco. Ulloa reports, from the information of the natives, that the *vomito prieto* was not known at St. Marthe and Carthagena before 1729-30, or at Guayaquil before 1740.

The black vomit has never yet been observed on the west coast of New Spain. The inhabitants of the sea shore, from the mouth of the Papagallo to Saint Blas, are subject to gastric, which often degenerates into adynamic fever ; and it may be stated, that a bilious constitution reigns almost continually in these plains, which, though arid and burning, are intersected by marshes, the resort of the crocodile. The yellow fever, and we request the attention of our readers to the fact, is still unknown even at Acapulco, which Humboldt describes as one of the most unhealthy situations of the new world, where the heat is more oppressive, and the air more stagnating than at Vera Cruz; where the inhabitants, for a great part of the year, do not see the sun, except through a stratum of olive-coloured vapour, not affecting the hygrometer; and where heaps of fish putrefying, exhale vapours which are considered as the chief cause of the bilious putrid fevers which reign upon that coast, and which, with cholera morbus, carry off numbers of the Mexicans, who descend from the high table-lands to purchase goods on the arrival of the galleons. So favourable does the situation of Acapulco appear to Humboldt for the development of yellow fever, that he attempts to account for its abence. " Perhaps, if this port, instead of being frequented by ships from Manilla

Guayaquil, and other places of the torrid zone, received ships from Chili and the northwest coast of America; if it were visited at the same time by a greater number of Europeans, or of the highland Mexicans, the bilious fever would soon degenerate into yellow fever, and the germ of this last disease would develop itself in a still more fatal manner than at Vera Cruz." Our readers will probably recollect Dr. Mitchill's theory of *septon*, and his illustration of it, by ascribing the healthiness of all limestone countries to the absorption of the septic acid. Of the falsity of this hypothesis, Gibraltar has furnished an incontrovertible proof, and the great lime kilns of Acapulco afford another; still, however, such is the political influence of Dr. Mitchill's theory, that on Humboldt's arrival at Philadelphia from the West-Indies, the hatchways were gravely painted with lime-water to absorb the *septon* which was supposed to be aboard the vessel: the poor Spanish sailors, in their ignorance, naturally enough concluded, that it was some *magical operation*, from which such a disproportionate effect as the destruction of contagion was expected.

From the uniformity of the heat during the year at Acapulco, Humboldt dreads, that if ever the yellow fever is developed there, it will continue during the whole year, as in other situations where the temperature varies only two or three degrees during the year.

It is a mistake that the yellow fever never appears in the southern hemisphere. It, in fact, first attacked a number of Europeans at Olinda, in the Brazils; it prevailed at Guayaquil in 1740; and in the beginning of this century, at Monte Video, so celebrated for the salubrity of its climate. During the last fifty years, the yellow fever has not appeared upon the coast of the Pacific Ocean, except at Panama, and there, as at Callao, the commencement of a great epidemic is often marked by the arrival of some ships from Chili; not that

they imported the disease from a country where it never existed, but because its inhabitants, coming from the healthiest country in the world, experience the same fatal effects of a sultry air, loaded with putrid emanations, as the inhabitants of the north.

On the coast of Mexico, an intimate connexion is observed between the progress of disease and the temperature of the air. At Vera Cruz there are only two seasons; that of the north winds, which blow from the autumnal to the vernal equinox, and of the southeast, which blows pretty regularly from March to September. The *vomito* does not commence, generally, till the medium heat is 75° Fahr. and is, therefore, seldom seen in December, January, and February; and although May is warmer than September and October, its ravages are most dreadful in these latter months, because a certain duration seems necessary to develop its full force. Thus, when it has been very violent in summer, it continues more or less during winter; but when it has been mild in summer, it ceases altogether; also, the rain which lasts from June to September, cannot be without influence. The commencement and termination of the rainy season are most to be dreaded.

M. Humboldt is of opinion, that the *vomito* is not *naturally* contagious, but that it is not inconsistent with other pathological phenomena for it to become so, from the influence of climate and seasons, the accumulation of sick, and individual susceptibility. Thus between the topics, *e. g.* at Vera Cruz, the *vomito* is universally allowed to be *not* contagious; while, in the more temperate climate of Europe, its contagious nature was as indisputably proved, by the escape of individuals in the very focus of the disease, who secluded themselves; and in the intermediate climate of North America, its contagious nature has always been the subject of violent controversy. In tropical situations, a second attack of

yellow fever is rare, at Vera Cruz unknown, but in the United States it is not uncommon.

Near Vera Cruz, the *vomito* never occurs higher up than three thousand and eighty feet above the level of the sea, which is exactly the limit below which the Mexican oak ceases to grow.

It is remarkable, that persons born and brought up in Vera Cruz, are not *there* subject to the disease. The same is true at Havanna, with regard to its inhabitants; and yet the natives of Havanna are sometimes attacked with yellow fever when they visit Vera Cruz, in August or September; while, on the contrary, natives of Vera Cruz have died of yellow fever at Havanna, Jamaica, and the United States.

It is also remarkable, that the natives of equinoctial countries, such as Vera Cruz and Havanna, are not susceptible of yellow fever in their own country, while, in the more temperate climates of North America, and Old Spain, the natives suffer equally with strangers. The whites and *metis*, who inhabit the elevated interior of Mexico, especially the muleteers and recruits, suffer more from yellow fever than strangers who arrive by sea, probably from experiencing a more sudden change of temperature.

In the most sickly season, the shortest stay in Vera Cruz is sufficient to excite the disease in strangers. Inhabitants of the city of Mexico, going to Europe, generally remain at Xalapa until the very moment of the vessel sailing, set out in the middle of the night, and are carried through Vera Cruz in a litter to the boat waiting for them at the Mole, and yet these often die of yellow fever in a few days; and in like manner Europeans, who, on their arrival, find litters prepared to carry them up to Perote, do not always escape.

At Vera Cruz, the yellow fever generally lasts longer than six or seven days, and deaths in the course of thirty or forty hours are very rare; whereas in Old Spain, cases have

terminated fatally in six or seven hours. The mortality is always greatest, when several ships of war, and many merchant vessels arrive at the same time in summer; thus the cruel epidemic of 1794, followed upon the arrival of three men of war.

Although the *vomito* at first indicates an asthenic diathesis, blood-letting is considered dangerous at Vera Cruz, the passage from synocha to typhus is so rapid. In the commencement of the disease, minoratives, bathing, iced water, sorbets, and other debilitating remedies are preferred; but when, to speak in the language of Brown, whose system, it appears, has excited more enthusiasm in Mexico than in any part of Europe, the indirect debility manifests itself, the most powerful stimuli are given with great success; such as more than an hundred drops of sulphuric ether, and sixty or seventy drops of laudanum, every hour. Cinchona has not been so successful in Vera Cruz, as in the West-Indies and Spain, and the mercurial treatment, though frequently tried, has been very generally abandoned. Frictions with olive oil have been more successful.

The yellow fever appears at distant but irregular periods. The epidemic of 1762 is the first on record, which, however, does not go back more than half a century. It continued to appear every year until 1775, after which it did not return till 1794, although during all the intermediate years, the concourse of foreign sailors was very great. Since 1794, it has prevailed whenever the north trade wind ceases to blow. Meteorological observations have, as yet, thrown no light upon these periodical epidemics.—*Edinburgh Medical and Surgical Journal.*

Lamarck's Botanical Investigations, Cuvier's Anatomy, &c.

M. de Lamarck, who is intrusted with teaching at the Museum of Natural History every thing connected with animals without vertebræ, published some years ago the work which serves as the basis of his lectures, in which he explains in a way peculiar to himself the classes, orders, and genera of these innumerable animals: but as travellers have since discovered many new species and genera; as anatomists have better developed their structure; and, lastly, as the discrimination of M. de Lamarck has discovered several new relations between them, he has published an abridged syllabus of his course according to this perfected method, in which he contents himself with indicating the characters of the superior divisions, and merely gives the simple nominative enumeration of the genera.

He follows, in point of arrangement, the order of the degrees of complication, commencing with the most simple animals. Supposing that those which have no nerves apparent, are moved only in virtue of their irritability, he denominates them *apathic animals*; he gives the name of *sensible animals* to others without vertebræ, and reserves that of *intelligent animals* for those with vertebræ. To his old classes, which are already well known to naturalists, he adds that of *cirrhipedes*, which comprehends the *sea glands*, and their analogous genera, and which he places between the *anelides* and *mollusci*; that of *epizoary* or intestinal worms, which he places among his apathic animals; and that of the *infusores*, or microscopic annimals without mouths or apparent intestines. He leaves the echino-dermes among the *radiarii* and the apathic animals, and in a greater degree of simplicity than that in which he places the intestinal worms.

We regret that want of room does not admit of our making known the other changes introduced by M. de Lamarck in

his orders, nor the numerous additions which he has made to the list of genera; but naturalists will not fail to examine them in the work itself.—*Tilloch's Philos. Magazine.*

M. Cuvier, purposing soon to commence the printing of his great work on Comparative Anatomy, which has occupied his attention for so many years, has presented to the class the table of the divisions, according to which the animal kingdom ought to be distributed in this work. For a long time naturalists were struck with the great differences which distinguish the invertebral animals from each other, while the vertebral animals resemble each other in so many respects. Hence resulted a great difficulty in drawing up their comparative anatomy; the animals with vertebræ being easily generalized, but not the others: a remedy, however, has been suggested for this difficulty: from the way in which the propositions relative to each organ were always grouped, M. Cuvier concluded that there exist among animals four principal forms, the first of which is that with which we are acquainted under the name of vertebral animals, and the other three are nearly comparable to it by the uniformity of their respective plans. The author denominates them *mollusci*, articulated animals, and radiated animals or zoophytes, and subdivides each of these forms or ramifications into four classes, according to motives nearly equivalent to those upon which the four classes rest, which are generally adopted among the vertebral animals. He has derived from this, in some measure, symmetrical arrangement, a great facility in reducing under general rules the diversities of organization.

The comparison which the same member has drawn of the osteology of vertebral animals, has furnished him with some new ideas as to the osseous structure of the head in this branch, and which he has also presented to the class.

It had been long since ascertained that oviparous vertebral animals, *i. e.* birds, reptiles, and fishes, had several common relations of organization, which made them differ from the viviparous or mammiferous vertebral animals ; M. Geoffroy Saint Hilaire had even presented some years ago an extensive and elegant work, of which we gave an account at the time, in which he proved, among other things, the identity of structure of the heads of all the ovipari, and the relations of the numerous pieces which enter into their composition, with those which we distinguish in the fœtus of the mammiferæ, in which, as is well known, the bones are much more subdivided than in adults.

M. Cuvier, adopting the views of M. Geoffroy, has endeavoured to determine, in a certain manner, to what bone of the head of the mammiferæ each groupe of bones of the head of the different ovipari answers ; and he thinks he has attained this, by adding to the analogy of the fœtus of the former, the consideration of the position and of the functions of the bones : *i. e.* by examining what organs they protect, to what nerves and vessels they give a passage, and what muscles are attached to them.—*Ibid.*

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M. de Humboldt has published the first volume of his Observations on the Animals of America, in which he enters not only upon different inquiries as to the condor, the electrical eel, the crocodile, and many other subjects which we stated in our preceding analysis ; but he has also given several entirely new memoirs, particularly one upon the apes of the new world, eleven or twelve species of which only had been described by Buffon and Gmelin, but which M. de Humboldt, by adding his own observations to those of M. d'Azzara and Geoffroy Saint Hilaire, extends to forty-six.—*Ibid.*

Capt. Laskey has in the press a scientific Description of the Rarities in that magnificent collection "The Hunterian Museum," now deposited at the College of Glasgow. It is intended to comprise the rare, curious, and valuable articles in every department of art, science, and literature contained in that great repository. This work, so generally interesting, may be expected to appear in July, when we have no doubt it will be received with the favour so acceptable an offering deserves.

Mr. Thomas Forster has in the press, Researches concerning Atmospheric Phenomena, in one volume, 8vo.

Mr. Bakewell's Introduction to Geology will shortly appear.

Professor Leslie has in the press a valuable work "On the Relations of Air to Heat and Moisture."—*Ibid.*

OBITUARY.

Died, in London, in November last, William Franklin, Esq. son of the late celebrated Dr. Franklin, and formerly Governor of the state of New-Jersey.

RECENT AMERICAN PUBLICATIONS.

Catalogus Plantarum Americæ Septentrionalis huc usque Cognitarum Indigenarum et Cicurum: or a Catalogue of the hitherto known Native and Naturalized Plants of North America; arranged according to the sexual system of Linnæus. By Henry Muhlenberg, D. D. Minister at Lancaster, in Pennsylvania. Lancaster. W. Hamilton. 8vo.

Elements of Surgery for the use of Students, by John Syng Dorsey, M. D. Adjunct Professor of Surgery in the University of Pennsylvania, one of the Surgeons in the Pennsylvania Hospital, &c. Philadelphia. E. Parker. 8vo. 2 vols.

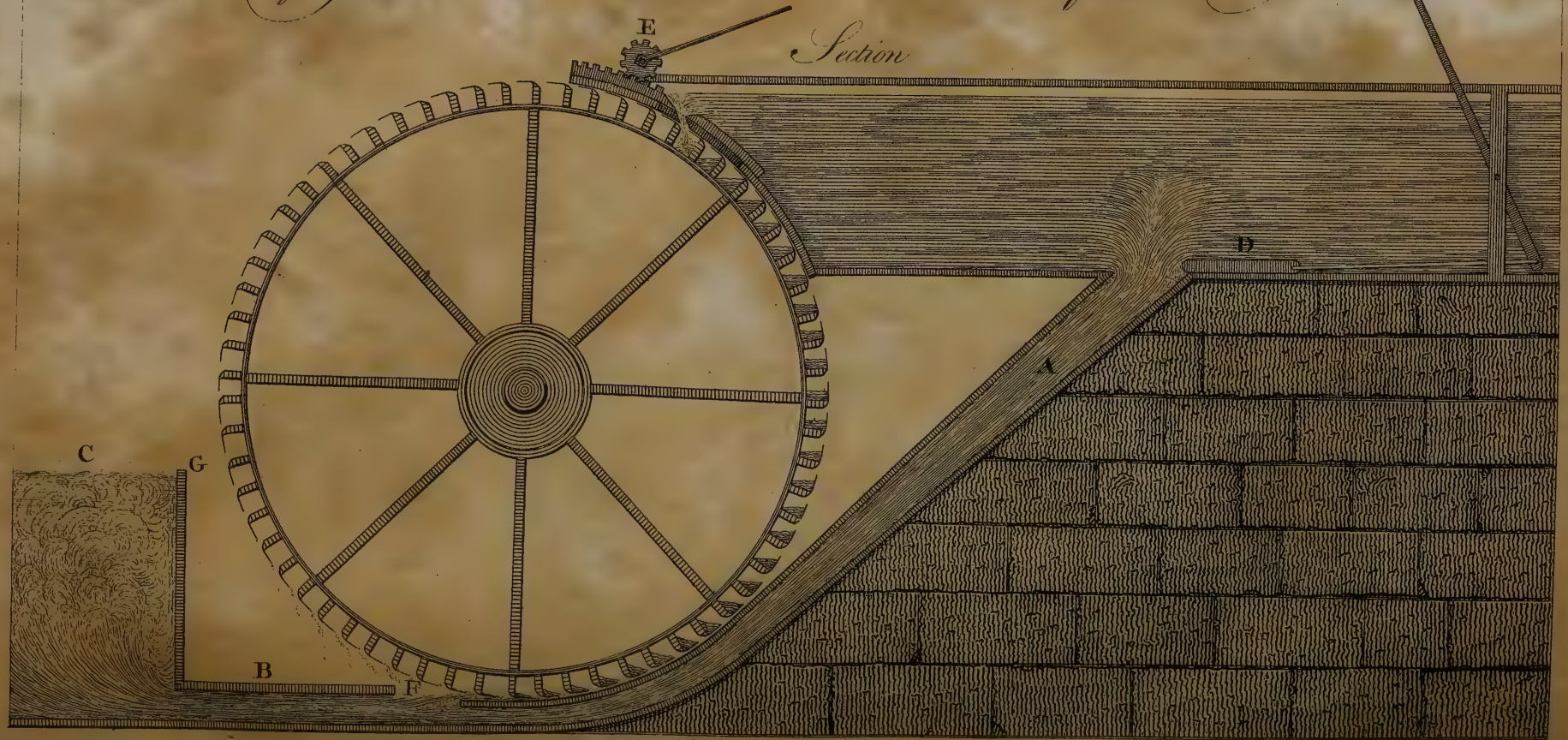
The Principles of Midwifery, including the Diseases of Women and Children. By John Burns, Lecturer on Midwifery, and member of the Faculty of Physicians and Surgeons, Glasgow. The third American edition, with additions and improvements. By Thomas C. James, M. D. Professor of Midwifery in the University of Pennsylvania. Philadelphia. T. Dobson. 8vo. 2 vols.

Elements of Physiology. By A. Richerand, Professor of the Faculty of Medicine of Paris, &c. &c. &c. Translated from the French, by G. J. M. De Lys, M. D. With notes, by N. Chapman, M. D. Professor of the Materia Medica in the University of Pennsylvania. From the first edition; revised, corrected, and enlarged. Philadelphia. T. Dobson. 8vo.

General Repository and Review; to be continued quarterly. No. VII. July, 1813. Cambridge. Hilliard. 8vo.

The Western Gleaner. Published monthly. No. I. for December, 1813. [Edited by C. F. Aigster, M. D.] Pittsburgh. Cramer & Co.

Description of Jacob Perkin's improvement in Mills for removing back Water



Patented the 26 Day of June 1815.

Hooker sculp.

A The main tube through which the water runs to drive away the back water. **B** The horizontal tube 1/3 larger than the main tube which receives the water from the main tube, as also the back wat , and the water which has been expended in turning the wheel. **C** the back water which is kept from flowing on the water wheel, by the superior power of the water which rushes down the main tube **D** the Gate which closes the main tube **E** The

THE

AMERICAN

MEDICAL AND PHILOSOPHICAL

REGISTER.

APRIL, 1814.

ORIGINAL COMMUNICATIONS.

I.

Improvement *in* Mills, *by* Jacob Perkins, Esq. *of Newburyport.*

(See the annexed Engraving.)

The object of this improvement is the removal of the inconveniences heretofore experienced from back water.

It is a well known fact that in most situations it has been found necessary to place water wheels from one foot to three feet higher than they otherwise should be, were it not requisite to avoid the back water occasioned by freshets and high tides: in almost all cases there is a serious loss of power, but especially when the fall consists of a few feet only. Mr. Perkins has satisfactorily proved, that with a head and fall of twelve feet, six feet of back water may be driven away, and with it, all the water which has been expended in moving the wheel: there is, therefore, no exaggeration in declaring, that taking into the account the time that many

nills are stopped by back water, and the permanent loss of power from the height at which the wheels are hung in order to avoid this difficulty, that from one fifth to one third of the power is absolutely lost; an evil which is completely obviated by this invention.

All the time in which the wheel is retarded by back water a large quantity is constantly running to waste; this invention accomplishes its removal by the application of a portion of this superabundant water, which would otherwise run over the dam.

The annexed plate will show the operation of this principle in removing back water. The construction of the floom, and raceway, differs from the common form, by having a tight tube, A, running from the bottom of the floom, as at D, to or past the centre of the bottom of the wheel, and of about four times the size of one which would be necessary to turn the wheel. The size of the tube may vary according to the back water common to the mill. The lower end of the main tube, A, being in a direct line to that of the horizontal tube, B, will direct the water which rushes down the former through the latter, and at the same time overcome the pressure of the water and atmosphere at C, so that the atmosphere may act upon the back water which had collected round the bottom of the wheel, and force it through the tube, B, which, being one third larger than tube A, will admit enough of the back water at the opening, F, to fill the tube B, and thereby, in a few minutes, to entirely remove it from the bottom of the wheel; and the water which has been expended in moving the wheel, will join the current at F, and pass off through the tube B. The bulk head, G, must rise above the extreme height of the back water, for, as there is no other passage for the water to escape from the wheel than through the tube B, there should be no other through which, in times of back water, it can pass to

the wheel. When the freshet is over, and the water has found its lowest level, the horizontal gate, D, should be shut, and the water which carries the wheel will run off through the tube B.

This method of removing back water will not apply to tide mills, except where there is a great surplus of water: in that case, by adopting this plan, the mill may be made to go sooner and later than it otherwise would. Where the tide rises at the tail of a common mill, this principle may be applied to great advantage, as the wheel, in many situations, may be set two or three feet lower than what it commonly is, and by driving off the back water occasioned by the tide, the extra power which is gained by increasing the fall, will be much more than the loss of the water expended in drawing off the back water at high tide.

II.

A case of Inguinal Aneurism, *communicated to the Editors of the Register. By* Wright Post, M. D. *Fellow of the Literary and Philosophical Society of New-York, joint Professor of Anatomy, Physiology and Surgery in the University of the State of New-York, &c.*

Harman Allen, a labourer, aged forty-one years, was admitted into the New-York Hospital, October 15th, 1813, with inguinal aneurism on the left side. About three and a half months previous to this period, he felt, as he described it, an aching kind of pain in the part, and, six weeks after, he discovered a small tumour with a pulsatory motion. From this time the tumour gradually increased, and was attended with considerable pain, especially upon extending

the thigh. The tumour, when he came into the hospital, appeared to be about three inches in diameter, and when the finger was applied to it, a sensation was produced, similar to that which arises from feeling a varicose aneurismal tumour.

Oct. 18. The attending surgeon directed a bandage and compress to be applied, so as to keep up a constant and moderate pressure upon the tumour.

Oct. 31. The pain which the patient had suffered suddenly ceased, and upon examination it was discovered that the strength of the pulsation had much diminished.

Nov. 2. The pulsation considerably increased, though not so strong as at first. The compress and bandage to be continued.

Nov. 4. Pulsation very obscure, pain returned. The tumour not quite so large as it was. Anodynes were directed to be occasionally used to relieve the violence of the pain.

Nov. 10. The pulsation in the tumour has entirely ceased. Pain lessened, but complains of great debility. The use of the bandage to be discontinued.

Nov. 12. Pulsation in the tumour has returned. From this period to the 22d the tumour increased very considerably in size, extending upwards so as to rise above Poupart's ligament.

An operation was now proposed; but the patient, apprehending more from this than from the disease, could not be prevailed upon to submit to what seemed the only probable means of preventing a fatal termination of the disease.

A few days after he was seized with violent pain in the tumour, accompanied with fever, and considerable inflammation and tumefaction about the upper part of the thigh. These symptoms were relieved by a cathartic, anodynes,

and the application of lead water and laudanum to the swelling.

From this time to the 3d of January, there were no occurrences of which it was thought necessary to take any particular notice, excepting that once in the course of December the pulsation in the tumour ceased for two or three days.

Jan. 4. The patient now resolved to submit to any treatment which we thought advisable for the preservation of his life; and the nature of the case could suggest no other than that of tying up the artery above the tumour. It is proper to remark here, that the tumour had extended itself in all directions, but more particularly upwards; so that at this time it had risen rather above a line passing transversely from one anterior superior spinous process of the ilium to the other. This circumstance, it was anticipated, would render the operation more difficult, and perhaps more hazardous, than if the aneurism had been situated altogether below the ordinary course of Poupart's ligament, as it would oblige me to seek for the external iliac artery higher in the abdomen, and of course in a situation more remote from the anterior parietes of this cavity. The condition of the patient, however, made it necessary to make the attempt, and accordingly I performed the operation this day at 12 o'clock.

An incision was made through the integuments with some degree of obliquity, between three and four inches long, beginning a small distance above the tumour, and extending upwards externally to a middle line between the umbilicus and superior anterior spinous process of the ilium. The abdominal muscles were then cut through until the peritoneum at the lower part of the wound was fully exposed. I next endeavoured to detach this membrane from the crural arch so as to get at the artery without opening into the

cavity of the peritoneum; but in this attempt I was frustrated. The strength and thickness of the peritoneum at this part was considerably greater than natural, and its adhesion to the ligament so firm, that the separation, which is ordinarily so easily effected, was found in this case altogether impracticable. This condition of the parts may reasonably be ascribed to the pressure of the aneurismal tumour. To arrive at the artery, therefore, under these circumstances, it was necessary to cut through the peritoneum, and thus expose the patient to the additional hazard of inflammation of this membrane, to which it is generally supposed to be very liable when an opening is made into the common cavity of the abdomen. But to accomplish my object, there was no alternative. I did not hesitate, therefore, in proceeding with the operation in this manner.

Upon the division of the peritoneum, a portion of the omentum protruded. This was easily returned, and upon introducing the finger, the artery was readily felt. I next endeavoured to detach the peritoneum and sheath from the artery; but every effort that I could make with the nail of my finger for this purpose was unavailing, and the artery was too deep to admit with safety the application of any other instrument, without increasing the division of the peritoneum to an extent that I thought would be too dangerous. It only remained, therefore, for me to endeavour to pass the ligature under the artery, by pushing the needle through the coverings of this vessel. To effect this, I placed the point of my finger upon the inside of the artery, which was to serve as a director. I then conveyed the needle, armed with a proper ligature, to the point where I wished it to penetrate, and with a moderate force, it pierced the covering of the vessel, and passing under the artery, was brought out on the outside of it. The means employed for passing the ligature under the artery, was the apparatus suggested by Dr.

Physick, of Philadelphia, andl ately represented in a plate annexed to a case of inguinal aneurism, in which it was successfully applied by Dr. Dorsey, of the same city. The advantage of such an instrument, in this operation, and the perfect adaptation of it to the circumstances of the present case, affords me the pleasure of offering my testimony in favour of its utility.

In tying the ligature, care was taken to avoid including any portion of the intestines which were now in contact with the fingers ; and upon drawing it sufficiently tight, the pulsation in the tumour entirely ceased. The wound was now dressed by bringing the lips together, and retaining them in contact by strips of adhesive plaster, over which a light covering of lint was applied, and kept in its situation with the T bandage, and the patient was carried to his bed.

The patient complaining of great pain in the wound, he was directed to take fifty drops of laudanum, and twenty additional drops every hour till ease was obtained. The limb of the affected side was covered with carded cotton, to preserve as much as possible a due temperature.

Five o'clock, P. M. The anodyne has lessened the pain very considerably.

Eleven o'clock, P. M. The patient is quite easy, and the limb retains its natural warmth.

Jan. 5, nine o'clock, A. M. He slept a little at the latter part of the night. Complains of more pain in the wound, which is increased by a cough, that has been troublesome to him towards morning for some time past; and in the effort to expectorate a slight nausea is felt.

Twelve o'clock, A. M. He appears much easier. Pulse 85. Skin a little heated. Bowels constipated. Directed to take an infusion of senna with manna and cream of tartar dissolved in it, in divided doses, until it should produce its desired effect.

Ten o'clock, P. M. The purgative has not operated, and he complains of more pain in the wound.

Jan. 6, 1 o'clock, A. M. No evacuation yet from the bowels. Pulse full, tense, and increased in frequency. The pain more violent in the wound and the neighbouring parts. An enema was prepared to be given him to relieve the constipation, but he would not consent to its administration.

Nine o'clock, A. M. The cathartic began to operate about two this morning, and produced frequent and copious dejections. Pulse less frequent: skin moist.

Twelve o'clock, A. M. Stools continue frequent, but he is quite comfortable in other respects. To restrain the frequent evacuations, he was directed to take, after every stool, a table spoonful of the following mixture.

℞. Tinct. Opii gtt. LX.
Aq. Menth. ℥iij. M.

Nine o'clock, P. M. One spoonful of the anodyne mixture answered the purpose for which it was given. He now complained of numbness in the leg, but more particularly in the foot, which was followed immediately by palpitation at the heart, and a feeling of faintness: pulse very irregular. This state continued about ten minutes. As he recovered, he complained of sickness at the stomach, and a constant desire to vomit. He took a little mint water, and in about twenty minutes the pulse became regular, and the nausea went off.

Twelve o'clock, P. M. Pulse rather full and frequent: skin heated.

Jan. 7, nine o'clock, A. M. He was attacked about three o'clock this morning with hiccup, which has continued more or less troublesome, attended with heartburn. Pulse 75, and soft; skin moist; bowels open. Let him take half a drachm of calcined magnesia.

Twelve o'clock, A. M. The magnesia has removed the heartburn. The dressings were now removed, and the wound found generally united by the first intention. The wound to be dressed as in the first instance.

From this day till the fifteenth of January, there were no occurrences deserving any particular notice, except the hiccup, which continued, with short intermissions only, till this period. This affection was seldom very violent, but it seemed uncontrollable, in a great degree, by any of the remedies which are usually employed for its mitigation or removal. The patient this day complains of a numbness in both inferior extremities. His pulse is natural. The tumour is considerably diminished.

Jan. 17. At the dressing of the wound to-day, the ligature came away. From the application of the ligature to the present period, there has never been any sensible difference between the temperature of the limb of the affected side and that of the other.

Jan. 18. His rest was disturbed last night by a pain on the outside of the left foot.

Jan. 19. Notwithstanding the application of an anodyne liniment, which was directed for the pain in his foot, it was still troublesome during the last night; but he is now nearly free from it. The tumour daily lessening.

Jan. 20. The patient again complains of pain extending from the knee to the foot; but is in every other respect very well.

Jan. 21. Rested well last night, the pain having entirely subsided.

Jan. 23. Had a very restless night, in consequence of pain in the hypogastric region. Bowels regular: has no fever, but complains of great soreness when pressure is made upon the lower part of the abdomen. Let a blister be

applied to the pained part, and a dose of castor oil administered.

Jan. 24. Has less pain than yesterday, and complains less of soreness. The oil operated twice.

Jan. 26. Some uneasiness is still occasioned by pressure in the neighbourhood of the wound; and he complains of restlessness, and sickness at the stomach when he awakes from sleep.

Jan. 28. The patient still complains of a sense of general and indescribable uneasiness, and of a pain extending from the groin to the knee.

Jan. 30. Since the last report he has improved so much as to sit up in a chair sometime to-day. His appetite is good; bowels regular; sleep natural.

Feb. 9. The patient is able to walk; but this action produces pain in the course of the muscles on the interior part of the thigh.

Feb. 24. An eruption has appeared on various parts of the body, but he feels no inconvenience from it. All the functions of the body are well, and regularly performed.

March 3. Complains of stiffness and soreness in his limbs. Blotches have appeared on different parts of the body. Let him drink the decoct. lignorum, and apply the ung. citrin. to the cutaneous affection.

March 9. The patient this day showed three or four ulcerations in the right axilla, with an enlargement of the glands of this part. These appearances led to a suspicion that their cause might be venereal; and, on inquiry, it was found that he had had syphilis, in the form of chancre, eighteen months ago; for which he took a decoction of the bark of sassafras, and some other remedies, all of which were not continued more than a week; and he does not know that there was any mercury among the remedies which had been prescribed for him. From these circumstances it

was thought advisable to put the patient on the use of mercury in addition to his other remedies.

The case now becoming an ordinary syphilitic one, it is not necessary for me to take any further notice of it as such.

March 22. The aneurismal tumour, which had been gradually diminishing, is harder, and is a little increased in size; but he complains of no pain in it.

March 24. A very distinct pulsation is perceptible in the tumour; but the hardness is less, and the size is diminished. The freedom with which he can use his limb is increasing every day.

It has not occurred, I believe, in any case of inguinal aneurism hitherto noticed, after the operation has been successfully performed, that a pulsation has returned in the tumour. But it is an event we might naturally expect sometimes to take place, where the anastomosing branches of the arteries should happen to be either unusually large or numerous. That one or the other, and perhaps both, of these conditions of the arteries, obtained in this instance, is rendered in some degree probable, from the circumstance of the temperature of the limb undergoing no perceptible change after the ligature was applied to the artery.

It is now near three months since the tumour began again to pulsate, but there has certainly been no increase in the size of it, in consequence of this greater freedom with which the blood is determined to it, and the limb is so far recovered in its powers, that the patient is sensible of no difference between the strength and action of this and the other. But as it may be supposed that the anastomosing arteries may still increase in diameter, will there not be danger hereafter of an enlarging aneurism, when the blood shall arrive at the tumour in increased quantity, and with augmented impetus? If we had no fact to assist us in forming an opinion upon this subject, it would be more difficult to offer an answer to

this question. But it is some satisfaction to me to be able to adduce a case which will tend to show that there is little apprehension to be entertained of a future increase of an aneurismal tumour, although a pulsation shall return in it after it had been a long time suspended by tying the artery. The fact to which I have reference, was a case of femoral aneurism, which had been produced by a wound of the crural artery. The disease had existed fifteen years when the artery was tied above the tumour in the usual manner. In this case the ligature upon the artery did not arrest the pulsation in the tumour; it only lessened the strength of it. The patient recovered from the operation in about the ordinary time, and the tumour gradually diminished until it was reduced to a size not exceeding one inch in diameter. It was probable, in this instance, that there was very little direct circulation of the blood from the trunk of the artery above the aneurism to the trunk below; and, therefore, almost the whole of the blood carried to the inferior part of the limb, passed through the anastomosing branches. To this circumstance we must ascribe that condition of the vessels, which allowed the blood to arrive at the aneurismal tumour in such quantity as to keep up the pulsatory motion after the ligature had been applied to the artery. The length of time, too, which had elapsed from the commencement of the disease to the period at which the operation was performed, would greatly favour the enlargement of the anastomosing arteries. It is now near twenty years since the operation was performed upon this man. The limb, which had been rendered wholly useless to him by the immense size of the tumour, and the extreme pain which he had suffered in the latter stages of it, recovered its powers in a reasonable time, and he has continued to use it in all the ordinary exercises of walking, riding, &c. with as much freedom, and as little inconvenience, as before the disease took place.

We have here, then, an instance of pulsation continuing in an aneurismal tumour, after the artery had been tied; but, notwithstanding the tumour has been reduced to a very small size, and although it still retains its original character, it has never showed any disposition to enlarge. After a knowledge of this fact, we may have less to apprehend in cases of aneurism, where the result shall be similar to the cases which I have recorded, than would be justified by mere reasoning alone.

I am aware that the circumstances attending the case of carotid aneurism, which I lately published, will tend to throw some doubts upon the subject; but I consider the after enlargement and rupture of the tumour, in that instance, as the effect of inflammation and ulceration; and not the impetus of the blood derived to it through the anastomosing arteries: for, in this case, the tumour had greatly diminished in size before it began again to increase, and when it did begin to increase, it was attended with heat, pain, and soreness to the touch, which are the usual indications of inflammation.

III.

Case *of* Hydrothorax, *with remarks.* *By* John N. Taulman, A. B. *of Rockland county, New-York.*

The following case occurred at the New-York Almshouse, in the practice of the writer of this paper. Should the editors think it worthy a place in the Register, they will please to insert it.

The subject of this disease was a man of rather delicate habit of body, about thirty-five years of age, and in whom the sanguine temperament is strongly marked. His former occupation was that of a labourer, and he then was in the

habit of using spirituous liquors. When dropsical symptoms first appeared, he had just completed a mercurial course, under which he was placed for the cure of secondary symptoms of syphilis. He was first infected with lues venerea, and had been repeatedly salivated: the principal part of that time he has been in this institution.

About the tenth of May he observed some swelling of his legs: of this, however, as it gave him but little pain, he made no complaint. He had previously observed that his urine had become very much diminished in quantity. In this, he says, he cannot be deceived, so singular was the phenomenon. About three months ago he found that he passed but three or four ounces in the morning, and that with considerable difficulty; as much more was usually voided during the remainder of the day. Things remained in this state till symptoms of hydrothorax appeared.

The œdematous state of his lower extremities had not existed many days, before, as he relates, he discovered some difficulty in breathing after he ascended the stairs. His nights were restless; no sooner did he get into a sound sleep than he was suddenly awakened by a sense of anxiety and difficult breathing, from which he got no relief but by sitting up in bed.

On the 24th of May, his situation became alarming. I found him sitting up, breathing with the greatest anxiety, in which manner he passed the preceding night. He had made several attempts to lie down, but was every time seized with a sense of suffocation, which obliged him to seek the erect posture. His pulse was remarkably full and strong, but not more frequent than natural; his respiration very much hurried, and inspiration short. From these symptoms there was no hesitation in pronouncing his disease effusion in the cavity of the chest, the effect of increased arterial action; and, accordingly, he was immediately let blood to the

amount of oz. xxiv. The oppression diminished while the blood was flowing. A large dose of glauber's salts was prescribed, which operated kindly. The next morning we found him considerably relieved; he had passed quite a comfortable night, and although his pulse had become more full and strong, yet further evacuations by the lancet were considered no way necessary. He was directed to take, to-day, three doses of nitre, each grs. xv.; to abstain from animal food, and to remain quiet. This evening his symptoms returned, but he neglected to call for assistance till early on the morning of the 26th, when his condition was greatly aggravated. He was sitting on his bed, clinching with his hands the head of another bed, and leaning forward with all his weight, thus throwing into action every muscle that could possibly assist in respiration. The lancet was again resorted to, and he lost blood to the amount of oz. xvi.; more blood would have been drawn, for very little alleviation of his distress took place, but the pulse fell considerably. A large blister was immediately applied to his chest, and he was directed to take of the tinct. digitalis, gtt. xl. In the afternoon, Dr. Gilbert Smith, the visiting physician to the institution, was requested to see him. The patient had derived no benefit from the prescriptions of the morning, but in every respect seemed worse; the oppression under which he laboured was extremely distressing. Dr. Smith advised a repetition of bloodletting as the only remedy affording the least hopes of success; a vein was accordingly opened, and he was bled oz. xxxiv. He was considerably relieved during the flowing of the blood; pulsation became smaller and weaker, and he was able to rest in a semi-horizontal posture: a dose of glauber's salts was exhibited. His legs having now become very much enlarged, it was conceived proper to evacuate by puncture the fluid collected in the cellular membrane.

27th. He passed a comfortable night in a semi-horizontal posture. The sal glauberi has produced copious evacuations. The quantity of fluid discharged from his legs is very great. He was now put on small doses of calomel and squills, for the purpose of exciting the various secretions, and particularly that by the kidneys.

28th. He slept soundly, his head not more elevated than usual; breathes naturally; takes a deep inspiration with ease: his pulse has become more frequent and full. He occasionally coughs, and expectorates, with ease, considerable bluish mucus. His urine is increased to double its late quantity. In addition to the calomel and squills, he was directed to take, every two or three days, a dose of glauber's salts.

Notwithstanding these depleting remedies, and abstinence from every thing stimulating, his pulse continued to rise, respiration became more difficult, and the sense of suffocation, in a horizontal posture, in some measure returned. On this account it was thought prudent again to take blood from his arm, to avert the danger with which he seemed to be threatened; and, accordingly, on the 5th of June, he was bled oz. x.: the pulse was reduced to its natural standard, and all sense of straitness of the chest entirely removed. He was directed to continue his remedies, with the addition of the spirit. æther. nitros. to excite more powerfully the secretion by the kidneys.

The œdematous state of his lower extremities has been nearly reduced by the continual discharge of fluid from the punctures. A roller was now applied, and he was directed to bathe his legs frequently in cold water.

Such a strong tendency was there to a return of his disease, that it was found necessary to continue this course till the 25th of June, before he could be considered as secure from a relapse.

June 25. His strength is greatly impaired, he is much emaciated, and the plethora of his blood vessels is diminished. Respiration is natural: cough and expectoration have ceased. He lies down without any inconvenience, and sleeps soundly. The quantity of urine has become natural, and is voided with ease. His legs are restored to their natural dimensions. He was now put on tonic remedies; ginger and the rust of iron were prescribed in doses of grs. viii. each, to be repeated three times a day. He was also directed to drink frequently of the bitter infusion, composed of quassia and gentian, with the addition of rhubarb; to continue the local cold bathing, and to return gradually to his accustomed diet and exercise.

July 10. He is improving rapidly under the tonic treatment. No symptoms of his disease have returned.

The inordinate proportion of fluids which must have existed in this case, cannot be referred to the ingesta as a cause. On the contrary, being excluded from all spirituous and fermented liquors, and indeed from every thing that could have a tendency to fill his system, and having for a long time before the attack almost made mercury his food, we ought, à priori, to expect to find him then less robust than he formerly was; and such actually was the case. The cause, then, of this fulness of the vessels is to be looked for elsewhere. It was before stated, that an interruption in the urinary secretion had existed for some months previous to his illness. Less fluid than natural being secreted by the kidneys, accumulation must have been the consequence, were there no other outlet for the fluids of the system; and evidence of none existed, for his skin appears to have regularly performed its functions.

The warmth of the spring expanding the fluids, already distending the vessels by their quantity, probably acted as an exciting cause. Such, then, being ascertained to be the na-

ture and causes of the disease, the indications of cure were very evident; and led to that free use of the lancet, and other evacuants, called for in all diseases arising from an excessive quantity of fluids.

This case shows the importance and necessity of that distinction in the causes of dropsies, which the books on practice do not generally make, and sufficiently enforce, and which we have never heard more clearly elucidated, than from the practical chair in the College of Physicians and Surgeons.* In this remark we do not intend to include our late distinguished countryman, Dr. Rush, who has happily discriminated between the different causes of dropsies.† Thomas, our latest systematic writer, mentions but one cause of dropsy, debility; and, of course, has but the one mode of treatment. Dr. Cullen, although he enumerates increased effusion among the causes of dropsies, yet, like that of Thomas, his treatment is calculated only for that kind which is the result of debility. Maclean, a late writer on Hydrothorax, observes, that "dropsy may arise either from increased exhalation, or from diminished absorption, or from both." But when he comes to investigate the manner in which this "increased exhalation" is produced, he dwells exclusively on relaxation of the solids concurring with tenuity of the blood, and thus makes dropsy the effect only of debility showing itself particularly in the exhalents and in the absorbents. But we would observe, that dropsies, and more particularly dropsy of the chest, frequently are consequent upon a plethora of the vessels, and a vigorous circulation; that dropsy does not always arise from a laxity of the exhalents, and a torpor of the ab-

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* See also Hosack's Quarterly Report on the Diseases of New-York. Register, vol. 3. p. 388.

† See Observations on the Cause and Cure of Dropsies. Med. Inquir. and Observ. vol. 2.

sorbents. The extent to which bloodletting was here carried may, perhaps, at first, seem unadvised and even empirical, but, upon more mature consideration, we trust, will be found fully justified by the nature and causes of the disease.

The grand remedy of Maclean, and on which he places his chief reliance, is the digitalis. By this, in combination with other medicines, he states that he cured several cases of well-marked hydrothorax, and relieved many more. He gives the treatment and termination of above eighty cases, and although he employed venesection in but one, (in which he afterwards regrets he did not employ it earlier and more extensively) yet in the body of his work, he does not seem unfriendly to this remedy. He observes, that "to lay down venesection among the remedies for the cure of this disease may appear inconsistent with the general principles held out, but however this may be, cases will sometimes occur where it may be absolutely necessary, and where safety, nay, *even the life of the patient*, may depend on its timely use; nor will it be found contradictory, on due consideration, to the general plan recommended." He, however, thinks that "very few hydropics will bear the loss of much blood."

With respect to the disease from which our patient had just recovered, when attacked with this more dangerous affection, I would observe, that it was removed by the use of the corrosive sublimate, with the addition of that valuable auxiliary, the decoction of the woods. This form of mercury, which, a few years since,* was recommended as a safe, efficacious, and convenient remedy in the cure of lues venerea, has lately been almost exclusively employed in the alms-house, in all forms of the disease, and with uniform success.

JOHN N. TAULMAN.

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* See an Inaugural Dissertation on Mercury, by John W. Francis.

IV.

Syllabus *of the course of* Lectures *on* Botany, *delivered in Columbia College, by* David Hosack, M. D. *Fellow of the Linnæan Society of London, and of the Royal Medical and Physical Societies of Edinburgh.**

PART I.

STRUCTURE AND FUNCTIONS OF VEGETABLES.

A.

GENERAL DIVISION OF NATURAL HISTORY.

1 Meteorology	History of the	Atmosphere,	
2 Hydrography		Waters,	
3 Geology		Earth,	
4 Zoology		Animal	kingdoms.
5 Botany		Vegetable	
6 Mineralogy		Mineral	

—Division of bodies into *animal*—*vegetable*, and *mineral*, considered—objections to—

Opinions of *Tournefort, Linnæus*, &c. examined.—

Minerals—characters which distinguish them from animals and vegetables—

Vegetables—their near approach to the animal kingdom—

Distinctions proposed by

Jungius,
Boerhaave,
Tournefort,
Ludwig,
Linnæus,
Alston,
Hedwig, &c.

* At the request of a number of students of medicine, the present Syllabus of the Course of Lectures on Botany, delivered for a series of years in Columbia College, while the author held the professorship of botany in that institution, is here inserted. It is republished from the copy drawn up and printed in 1795.

Corals and *Zoophytes*, referred by some authors to the vegetable and fossil kingdoms—their *animal* nature illustrated by the discoveries of *Peyssonel, Trembley, Jussieau, Donati, Ellis*, &c.—

B.

COMPARISON OF PLANTS AND ANIMALS.

1 Their origin
2 Growth and manner of receiving nourishment.
3 Food.
4 Climate.
5 Secretion and excretion.
6 Sensation—volition—motion—sleep—watching.
7 Sexes.
8 Propagation.
9 Diseases.
10 Death.
11 Natural decomposition.
12 Chemical Analysis.

CONCLUSION—Animals and Vegetables, links of the same chain of being—objections to, by some Metaphysicians, considered.

C.

GENERAL ARRANGEMENT OF VEGETABLES.

1 Palms.
2 Trees.
3 Shrubs.
4 Herbs.
5 Grasses.
6 Ferns.
7 Fungi.
8 Mosses.
9 Algæ.

—Characters of each illustrated.—

D.

COMPONENT PARTS OF A PLANT.

1 Root.
2 Trunk.

3 Branches.
4 Leaves.
5 Supports.
6 Flower.
7 Fruit.

—Exceptions to—

E.

ANATOMY OF PLANTS.

A.—SOLIDS.

1 Epidermis.
2 Rete Mucosum.
3 Cortex—its inner layer LIBER—
4 Alburnum.
5 Lignum.
6 Medulla.
7 Vasa Propria.
8 Tracheæ, or air vessels—have no existence.—

—Structure and functions of plants illustrated by dissection and experiment.—

B.—FLUIDS.

(a.)—NUTRITIOUS FLUIDS.

1 Lymph.
2 Sap.

—Circulation of the sap disproved—doctrine of the Ancients—experiments of HALES, HOPE, WALKER, &c.

(b)—SECRETED FLUIDS.

1 Gums.
2 Resins.
3 Gum Resins.
4 Balsams.
5 Oils—fixed and volatile.
6 Aroma—grateful and poisonous.
7 Water.
8 Vital air.

C.—ANOMALOUS SUBSTANCES.

1 Saline Substances.
  i Sugar,
  ii Manna,
  iii Nectar,
2 Farina,
3 Fœcula,
4 Colouring Matter.
—Observations on colours, and the principles of dyeing.—

F.

CHEMICAL ANALYSIS OF VEGETABLES.

1 Oxygen,
2 Hydrogen,
3 Carbon,
} Common to all vegetables.

4 Nitrogen,
5 Phosphorus,
6 Sulphur,
7 Acids,
8 Alkalis,
9 Earths,
10 Metals,
} Contained in particular vegetables.

G.

FOOD OF PLANTS.

1 Air,
2 Water,
3 Earth,
4 Heat,
5 Light.
—All necessary to the perfect growth of plants—illustrated by experiments and observations.—
—Experiments of VAN HELMONT,
BOYLE,
HALES,
DU HAMEL,
TILLET,
HASSENFRATZ,
SENEBIER, &c.—

—Chemical Analysis of the *food* of plants compared with the Chemical Analysis of *plants*.—

H.

SOILS.

1 Variety.
2 Composition.
3. Manner of Operation.

I.

MANURES.

1 Animal.
2 Vegetable.
3 Mineral.
4 Electricity.

—Operation of Manures—how far useful or injurious.—

K.

OF THE SEED.

A.—DIFFERENT KINDS.

1 Seed properly so called.
2 Nux.
3 Propago.

B.—COMPONENT PARTS OF THE SEED.

1 Arillus,
2 Hilum,
3 Foramen,
4 Cotyledon,
5 Corculum,
  i Plumula,
  ii Radicula,
6 Corona,
7 Ala.

—Structure and Functions of each illustrated by dissection and experiments.

C.—VEGETATION OF THE SEED.

1 Impregnation.
2 Air.
3 Moisture.
4 Heat.
5 Light, } Not essential to the first growth
6 Earth, } of the Seed.

} Necessary to Vegetation.

—Experiments of CURTIS, &c.—process of Vegetation described.

D.—PROPAGATION.

(a.)—NATURAL PROPAGATION.

1 Seeds.
2 Roots.
3 Suckers.
4 Stems.
5 Bulbs.
6 Leaves.

(b.)—ARTIFICIAL PROPAGATION.

1 Cutting.
2 Layers.
3 Engrafting.
4 Inoculation.

—Structure of Buds—
—Equivocal generation, objections to—

L.

OF THE ROOT.

A.—DIFFERENCE OF STRUCTURE AND SHAPE.

1 Bulbous.
2 Tuberous.
3 Fibrous.

B.—MANNER OF GROWTH.

1 Creeping.
2 Horizontal.
3 Perpendicular.

C.—DURATION.

1 Annual.
2 Biennial.
3 Perennial.

—Exceptions from Culture, Climate, &c.

M.

OF THE TRUNK.

A.—DIFFERENT KINDS.

1 Caulis.
2 Culmus.
3 Scapus.
4 Frons.
5 Stipes.

B.—DIFFERENT SPECIES ARISING FROM—

1 Structure.
2 Height.
3 Direction.
4 Shape.
5 Surface.
6 Composition.
7 Branches.
8 Colour.

—Illustration.—

N.

OF THE LEAVES.

A.—COMPONENT PARTS OF A LEAF.

(a.)—FOLIUM.

1 Its base.
2 Apex.
3 Surfaces.
4 Parenchyma.

(b.)—PETIOLUS.

1 Its shape
2 Length.
3 Insertion.
4 Direction.
5 Surface.

B.—SIMPLE LEAVES.

1 Place of insertion.
2 Manner of insertion.
3 Relative situation.
4 Direction.
5 Shape.
6 Surface.
7 Length and expansion.
8 Substance.
9 Duration.—

C.—COMPOUND LEAVES.

—Degree of Composition.
—Illustration.—

D.—FUNCTIONS OF LEAVES.

1 Use in the vegetable economy as organs of respiration.
2 Influence upon the atmosphere.—
Experiments of MILLER,
HALES,
MARIOTTE,
BONNET,
DU HAMEL,
PRIESTLEY,
INGENHOUSZ,
SENEBIER.

O.

FULCRA, OR MORE PROPERLY *APPENDAGES.*

1 Stipulæ.
2 Bracteæ.
3 Cirrhus.

4 Spini.
5 Aculei.
6 Pili.
7 Glandula.—

—Illustration.—

P.

ORGANS OF FRUCTIFICATION.

A.—PEDUNCULUS.

1 Its composition.
2 Place of insertion.
3 Relative situation.
4 Direction.
5 Structure.

B—RECEPTACULUM.

1 Its composition.
2 Surface.

C.—CALYX.

1 Perianthium.
2 Involucrum.
3 Gluma.
4 Spatha.
5 Calyptra.
6 Volva.

Characters of each.

1 Shape.
2 Number.
3 Divisions.
4 Number of pieces.
5 Situation.
6 Colour.
7 Duration.

D.—COROLLA.

1 Its shape.
2 Regularity.

3 Divisions.
4 Number of pieces.
5 Place of insertion.
6 Colour.
7 Duration.—

E.—STAMINA.

(a.)—FILAMENTUM.

1 Its length.
2 Proportion.
3 Figure.
4 Number.
5 Connexion.
6 Insertion.

(b.)—ANTHERA.

1 Shape.
2 Number.
3 Disposition.
4 Structure.
5 Pollen.

E.—PISTILLUM.

(a.)—GERMEN.

1 Its situation.
2 Structure.

(b.)—STYLUS.

1 Shape.
2 Number.
3 Division.
4 Length.
5 Direction.

(c.)—STIGMA.

1 Shape.
2 Number.—

Sexes of plants—imperfectly known to the ancients—demonstrated by Linnæus—

Experiments of LINNÆUS,
SMITH, &c.

Objections of—ALSTON—
—SMELLIE—
—SPALLANZANI—considered—

G.—PERICARPIUM.

1 Capsula.
2 Conceptaculum.
3 Siliqua.
4 Legumen.
5 Drupa.
6 Pomum.
7 Bacca.
8 Strobilus.—

H.—SEED.

—(SEE K. PAGE 464.)

Q.

INFLORESCENCE.

1 Spadix.
2 Verticillus.
3 Capitulum.
4 Spica.
5 Panicula.
6 Amentum.
7 Racemus.
8 Fasciculus.
9 Umbella.
10 Cyma.
11 Corymbus.
12 Thyrsus.

—Illustration.—
—Calendarium Floræ, &c. &c.

PART II.

SYSTEMATIC ARRANGEMENT OF VEGETABLES.

A.

HISTORY OF BOTANY.

FIRST PERIOD.

I. STATE OF BOTANY AMONG THE GRECIANS.

HIPPOCRATES, 400 years A. C.
THEOPHRASTUS—"Historia Plantarum"—500 plants 320 A. C.

II. STATE OF BOTANY AMONG THE ROMANS.

DIOSCORIDES—600 plants— 70 P. C.
PLINY—Compilation—1000 plants— 74
GALEN— 131

—Destruction of the Roman Empire—
—Decline of Learning until the eighth century—
—Learning revived by the Arabians.—

III. STATE OF BOTANY AMONG THE ARABIANS.

Translations and compilations from the Grecian and Roman writings—
—Decline of Learning until the fifteenth century—

SECOND PERIOD.

—Age of Commentators and Translators, 1500
BRUNFELSIUS—first accurate prints of plants 1532
First public Botanic Garden at Padua, 1533
CONRAD GESNER—first Museum in Natural History—first suggested a systematic arrangement of plants into class—order—genus, and species, 1560
CÆSALPINUS—improved the proposed classification of Gesner, 1583
F. COLUMNA—first copperplates—improved the genera of plants, and Botanic language, 1592
J. BAUHIN, "Historia Plantarum Universalis," 1613
CASPAR BAUHIN, "Pinax Theatri Botanici," 6000 plants—with synonymes of the ancients, 1628

PARKINSON—" Theatrum Botanicum," 1640
JUNGIUS—" Doxoscopiæ Physicæ Minores"—containing the first principles of Linnæan classification, 1657
SOCIETIES for promoting knowledge.
Royal Society of London, 1665
Royal Academy of Sciences at Paris, 1666
GREW—" Anatomy of Plants," 1671
MALPIGHIUS—" Anatomia Plantarum," 1675
RHEEDE—" Hortus Malabaricus," 1676
MORISON—" Historia Universalis Plantarum"—a new system of arrangement, 1678
RAY—" Methodus Plantarum Nova Synoptica," 1682
" Historia Plantarum Generalis," 1686
" Synopsis Method Stirpium Britannicarum," 1690
HERMAN, New System—" Flora Lugduno Batava," 1690
RIVINUS, New System, 1690
PLUMIER—" Description des plantes de L'Amerique," 1693
SIR HANS SLOANE—" Natural History of Jamaica," 1696
TOURNEFORT—New System—improved the genera— 1697
KŒMPFER—" Amœnitates Exoticæ." 1712
SCHEUCHZER—Agrostagraphia 1719
BOERHAAVE—New System, 1720
MAGNOL—New System, 1720
HALES—" Vegetable Statics," 1727
MICHELI—CRYPTOGAMIA, 1729
CATESBY—" Natural History of Carolina," &c. 1731

THIRD PERIOD.

LINNÆUS—Sexual System—
" Fundamenta Botanica," 1735
" Species Plantarum," 1764.
" Genera Plantarum," new edition by Schreber, 1789.
" Systema Vegetabilium," 14th edition by Murray, 1784.
Do. do. by Gmelin, in his " Systema Natura Linnæi," 1791.
" Philosophia Botanica."
" Amœnitates Academicæ," new edition, by Schreber, 1787.
" Flora Lapponnica," new edition, by Smith, 1792.
" Prælectiones in Ordines Naturales," by Giseke, 1792.
&c. &c. &c.
DILLENIUS—" Historia Muscorum," 1741
RUMPHIUS—" Herbarium Amboinense," 1741
HALLER—" Stirpes Helveticæ." 1742

LUDWIG—"Institutiones Regni Vegetabilis," 1742
CLAYTON—"Flora Virginica," 1742
GMELIN—"Flora Siberica," 1747
ALSTON—"Tyrocinium Botanicum," 1753
BONNET—"Recherches sur l'usage des feuilles," 1758
DU HAMEL—"Physique des Arbres."
BERNARD DE JUSSIEAU—"Genera Plantarum secundum ordines naturales disposita." 1759
Do. new edition by Paulus Usteri, 1791.
HUDSON—"Flora Anglica," 1762
ADANSON—"Familles des Plantes," 1763
SIR JOSEPH BANKS, } 1763
DR. SOLANDER, }
JACQUIN—"Historia Stirpium Americanarum." 1763
"Hortus Vindebonensis," 1770.
"Flora Austriaca," 1773.
FLORA DANICA. 1766
SCHREBER—"History of Grasses," 1769
SIR JOHN HILL—"Vegetable system," new system, 1773
AUBLET—"Guiana," 1775
CURTIS—"Flora Londinensis," 1777
"Observations on Grasses, 1790.
"Botanical Magazine," 1793.
"Observations on vegetation," &c. &c. &c.
LIGHTFOOT—"Flora Scotica," 1778
LA MARCK—"Flore Francoise"—new system— 1778
HEDWIG—Cryptogamia, 1782
PALLAS—"Flora Rossica," 1784
L'HERETIER "Geraniologia"—"Sertum Anglicum," 1784
THUNBERG—"Flora Japponnica," 1784
MARSHALL—"Arbustrum Americanum," 1785
DICKSON—"Cryptogamia," &c. &c. &c. 1785
WALTHER—"Flora Caroliniana," 1788
GÆRTNER—"De Fructibus et Seminibus plantarum."
—New System, 1788
SMITH—"Reliquæ Rudbeckianæ," 1789
"Icones Plantarum hactenus ineditæ," 1789.
"Icones Pictæ Plantarum Rariorum," 1790.
"Spicilegium Botanicum, 1791."
"Botany of New Holland," 1793, &c. &c. &c.
ENGLISH BOTANY, 1790
WOODVILLE—"Medical Botany," 1790
Transactions of the Linnæan Society of London, 1791
MARTYN—"Flora Rustica,"—"Language of Botany," &c. &c. &c. 1793

B.

LINNÆAN ARRANGEMENT.

A.—ARTIFICIAL, OR SEXUAL SYSTEM.

—Divided into—

1 Classes.
2 Orders.
3 Genera.
4 Species.
5 Varieties.

—Characters of each—

(a.)—CLASSES FORMED FROM

1 The number
2 Place of insertion
3 Proportion
4 Connexion
5 Disposition, &c.
} Of the Stamina.

—Illustration—

(b.)—ORDERS FORMED FROM

1 The number
2 Fertility
3 Situation
} Of the Pistilla.
4 Structure of the Pericarpium.
5 Number
6 Connexion
7 Disposition, &c.
} Of the Stamina.

—Illustration—

(c.)—GENERA FORMED FROM THE ORGANS OF FRUCTIFICATION.

(d.)—SPECIES FORMED FROM

1 The Root.
2 Trunk.
3 Branches.

4 Leaves.
5 Fulcra, &c.

(e.)—VARIETIES—THE EFFECTS OF CLIMATE, CULTURE, &c.

—Illustration—

—Alterations of the Linnæan System, proposed by Thunberg—Gmelin, &c.—

B.—NATURAL ORDERS OF LINNÆUS.

—Illustration—

C.

SYSTEM OF JUSSIEAU.

—Compared with the natural orders of Linnæus—
—Advantages of each.—

D.

—Plants useful in Diet—Medicine—Agriculture, &c. illustrated with practical observations—

E.

—Herbarium—advantages of—manner of preserving and arranging plants—

—CONCLUSION.—

V.

Further Observations on Mercury. *By* **John W. Francis, M. D.** *Fellow of the College of Physicians and Surgeons of New-York, Member of the Society for the Promotion of Useful Arts in the State of New-York, Corresponding Member of the Massachusetts Historical Society, Fellow of the Literary and Philosophical Society of New-York, &c.*

In a former volume of the Register,* the writer offered a concise view of the medical history of mercury, from the period of its first introduction into practice, as an article of the materia medica, to the present time, and considered the effects of this mineral, on the human body, in its metallic state. Some observations were also made on the evil consequences arising from the injudicious administration of mercurial preparations, and the inexpediency and pernicious effects of the mercurial practice, in certain febrile diseases, particularly in the treatment of the yellow fever of the United States, were pointed out. On the present occasion it is proposed to consider the principles upon which the curative action of mercury depends, as deduced from its general operation upon the animal system, and from the theory of its action thus attempted to be established, to recommend some alteration in the treatment of a disease of acknowledged specific contagion.

Numerous and discordant are the opinions which have been maintained by professional men on the curative action of mercury in the treatment of disease; and upon an examina-

* Vol. iii. p. 424—447.

tion into the history of this medicine, the most superficial observer will perceive that these different opinions have a relation more or less corresponding with the prevailing theories and physiological knowledge of the times. Upon the first introduction of mercury as an article of medicine, when it was administered in its metallic state, it was supposed to overcome all obstructions by its specific gravity. Upon its more general and successful employment by Paracelsus and others, its action, it was presumed, was readily explained according to the crude and absurd notions of the chemists. After this period its operation, in common with other remedies, was successively elucidated agreeably to the opinions of the humoral pathologists, and the corpuscularian doctrines of the mechanical physicians. Its peculiar action, however, in the treatment of lues venerea, has been more especially the subject of consideration among the most distinguished authors who have written on that disease, as well as of those who have treated of the materia medica. In not a few instances, it has given birth to the most fanciful and erroneous ideas, relative to the pathology and functions of the human system. Even the great Boerhaave, who acquired and appropriated to his own use the knowledge of all preceding ages, "who examined systems by experiments, and formed experiments into systems,"* believing the venereal disease to be seated in the cellular and adipose membrane, conceived its cure was to be effected by melting down the adipose substance by salivation.† And at the present day, after the more recent and popular theories of Mr. John Hunter and of Mr. Benjamin Bell, the modus operandi of this medicine remains a question far from being decided.

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* Johnson's Life of Boerhaave, Works, vol. xii.

† Prælectiones Acad. de Lue Venerea. Prefatio ad Lusini Aphrodisiacum, fol. Lug. Bat. 1728.

Aware of the many difficulties which occur in accounting for the curative action of mercury in the treatment of disease, the writer does not presume to suppose he can remove the obscurity in which this subject is involved: but as the theory of its operation will be the more readily understood in connexion with its effects upon the body, it seems necessary that they should first be briefly mentioned. Passing over the still more recent and more fanciful opinions entertained on this subject, by Doctors Girtanner, Beddoes, Thornton, Blair, and others, a few remarks may first be offered, perhaps with some advantage, upon the respective productions of Mr. Hunter and of Mr. Bell; without the least view, however, to disparage the intellectual labours and numerous scientific discoveries of the former, or the great practical sagacity and eminent professional services of the latter.

Mr. Hunter, entertaining the opinion that no two morbid actions can exist in the system at the same time, maintained that the salutary effects of mercury depended upon its producing an action incompatible with that which already existed; counteracting the venereal irritation by producing another of a different kind. This opinion of Mr. Hunter may, at first sight, appear to derive considerable support from the method of cure which is generally had recourse to in the treatment of some diseases; as, for instance, the removal of glandular obstruction by the influence of calomel on the salivary glands, and the transfer and diminution of a partial inflammation by the operation of epispastics. The general law, however, which he first devised and employed for the explanation of pathology, that two actions cannot be carried on at the same time in the same part, or in the same constitution, remains yet to be established, notwithstanding the great plausibility with which it has been enforced.

It is scarcely necessary to remark, that so far as it regards inanimate matter, this principle is altogether inadmissible, as is abundantly proved by the doctrines of projectiles. The history of diseases also demonstrates that this law is unfounded, and particularly of those arising from a specific material. That the human body is susceptible of the operation of two distinct contagions at the same time has been satisfactorily shown by the facts recorded by Dr. Patrick Russell, of the small pox and measles which prevailed at Alleppo, in 1765.* On the authority of Bergius and Tandon, mention is made of several cases in which the measles and small pox appeared together in the same individual.† Dr. Willan witnessed the occurrence of hooping-cough (a disease of acknowledged specific contagion) during the eruption of the small pox in the same person; the former disorder remained a long time after the latter without any material alteration.‡ Cases of small pox combined with measles came under the notice of Dr. Walker.§ Desessarts mentions the complication of small pox with scarlatina.‖ Mr. Leese inoculated an infant while labouring under measles, and both diseases went through their ordinary course.¶ Two cases which exhibited unequivocal evidence of the possibility of two distinct diseases, small pox and measles, arising at the same period in the human constitution, and each preserving its ordinary course as when separately existing, attended with all their usual characteristic

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* Trans. of the Society for the Improv. of Med. and Chirurg. Knowledge, vol. 2

† Ring's Observ. on Inoculation; London Med. and Phys. Journal, vol. 14. p. 142.

‡ Reports on the Diseases of London, p. 38.

§ Inquiry into the Small Pox. See also London Philos. Trans. No. 429.

‖ Journal de Med. t. 49. London Med. Rev. vol. i. p. 313.

¶ Lond. Med. and Phys. Journ. vol. 4. p. 18.

symptoms, are recorded by Dr. Tracy.* A number of cases of small pox co-existing with measles, and the two diseases going through their regular stages in the same individuals, occurred at the Foundling Hospital, at Dublin, as appears from extracts from the memoirs of the Medical Society of that city, communicated by Dr. Rainey.† All these instances of the continued operation of measles with other disorders of specific contagion, it will be proper to bear in recollection, are cited from modern authors: the opinions of the more ancient writers on this point being disregarded on account of the errors into which they were led from adopting the principles of the Arabian physicians, and considering and generally treating these different specific disorders, small pox, measles, and scarlatina, as modifications of the same disease.‡

Mr. Maurice vaccinated two persons who had been previously exposed to measles. The vaccine infection and the measles went through their usual course at the same time.§ It appears from the observations of Dr. Woodville, Dr. Willan, and other writers on the cow pox, that if the constitution be submitted simultaneously to the action of the small pox and vaccine diseases, that these disorders go through their course at the same time without influencing each other.‖ Many cases of this kind might be mentioned.

In the report of the New-York City Dispensary, published July, 1809, the physician of the cow pox department

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* Mitchill and Miller's Med. Repos. vol. 3. p. 105.

† Duncan's Med. Commentaries, vol. 3. p. 444; Macbride's Practice of Physic, p. 376.

‡ *Vide*, Sennertus, Med. Pract. vol. 4. cap. xii. Diemerbroeck, Tract. de Variol. et Morbil. cap. xiv.

§ Lond. Med. and Phy. Journ. iv. p. 38.

‖ Reports on the Diseases of London, p. 313. Woodville's Reports for a series of Inoculations for Variolæ Vaccinæ, p. 145, &c.

recorded the case of a child who, on the eighth day after it was vaccinated, had the vaccine disease with all its characteristics, and, at the same time, laboured under a "plentiful eruption of small pox," to which disorder it had been exposed by an imprudent visit some days previous. The two diseases appeared entirely distinct and independent of each other. The physician vaccinated six children from the fluid of the vesicle, who all had the regular cow pox, and were afterwards tested by the small pox inoculation without effect. Several children were inoculated with the matter from the small pox eruption who took the disease in its usual form.* Dr. Adams himself, the unqualified and indiscriminate panegyrist of the doctrines of Mr. Hunter, asserts, that small pox and cow pox "will proceed together in the same person without the smallest interruption to each other's course."† Instead, however, of admitting the validity of the fact, in opposition to the universal law of Mr. Hunter, Dr. Adams declares that this circumstance only proves the *identity of the two morbid poisons.* Admirable dexterity of reasoning!

If the constitution, imbued with the peculiar matter of any of the diseases of specific contagion, or under the action of the venereal virus, were on this account, during the presence of such peculiar specific matter, not susceptible of the influence of other diseases of a specific origin, who would not have observed the instances of exemption from the operation of contagious and infectious diseases, and have ascertained and made known so singular and specific a cause? Who is prepared to say, that the individual labouring under

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* Gillespie's Report on the Cow Pox, in Mitchill and Miller's Med. Repos. vol. 13. p. 87.

† Observations on Morbid Poisons, 4to. p. 398. See also his Popular View of Vaccine Inoculation, p. 41.

lues venerea is, on that account, exempt from the influence of small pox; or that he who is infected with small pox is secured from the attacks of plague or yellow fever?

The hypothesis of Mr. Hunter, however, whether it be correct or not, is irreconcilable with another principle which he himself has elsewhere adopted, that the venereal disease often becomes the immediate cause of other disorders, by calling forth latent tendencies into action, as he here admits the concurrence of two distinct actions. "I have seen in many cases," says he, "the tendency so very strong, that it has taken place *before the venereal has been entirely subdued.*"* But enough has been said to prove the co-existence, in the same individual, of diseases essentially different in their peculiar character, and arising from the operation of distinct specific causes.

Agreeably to the law which Mr. Hunter laid down, the method of treatment in the venereal disease is by counter irritation, and to excite an irritation greater than that of the venereal. Let this principle be granted as well founded, and it need not here be stated how extensive would be the class of anti-venereal remedies. If the salutary effects of mercury depended upon its producing irritation, then other medicines acting as irritants would occasion similar happy effects. Even fever itself, the effect of irritation, might be of the number of anti-syphilitic remedies; yet, in the treatment of lues venerea, it is one of the most common objects of the physician's attention to subdue and guard against fever, as well as other sources of irritation. But the premises on which this ingenious author proceeds cannot be granted. "The removal of venereal action by mercurial action (to quote the language of an able critic) is gradual and progressive; the mercurial must, therefore, exist along with the ve-

* Hunter on the Venereal, p. 26.

nereal, until the latter is entirely overcome; and if these actions were not at certain periods co-existent, the cure must be accomplished in a moment, or it could not be accomplished at all."*

The theory supported by Mr. Bell, that mercury acts as an antidote in the cure of the venereal disease, is no less untenable than that of Mr. Hunter. The experiment, which he has considered as decisive, of the matter of lues venerea on being mixed with triturated mercury (Plenck's solution) becoming inert, and, consequently, incapable of producing disease, can be admitted only as a species of chemical agency upon inorganized materials, and will by no means apply to the organized animate body. The assumption that such an operation takes place in the human system is altogether gratuitous. If, again, the principle just stated were true, that mercury possesses a peculiar "antidotal" or neutralizing power, similar to the operation of an alkali upon an acid, the particular activity and the advantages which certain preparations of this metal possess, might be regarded as of no practical importance, and corrosive sublimate and the crude mineral be employed without distinction: the successful treatment of this disease would uniformly depend upon the *quantity* of mercury administered. But this would lead to the adoption of a practice at variance with the experience of several very eminent writers, and one which Mr. Bell himself thinks proper to guard against:† and, indeed, the very small quantity of corrosive sublimate which is necessary to effect a cure, renders it almost certain, as remarked by Dr. Cullen,‡ that mercury does not cure the disease by

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* London Med. Review, vol. 1. p. 202.

† Bell on Gonor. Virul. and Lues Ven. vol. 2. p. 259.

‡ Cullen's Mat. Med. vol. 2. p. 254.

being an antidote to the poison. The arguments in support of this theory, derived from the operation of mercury when locally applied, are not to be considered as of any importance; local disease may frequently be changed and effectually cured by the application of local remedies. The venereal disease can be removed by such remedies only as produce a general action upon the whole constitution, the medium through which the morbid matter is diffused, and upon which it exerts its destructive influence.

Firstly, In what manner does the poison of specific diseases operate upon the human constitution? and,

Secondly, What are the changes effected in the system by the influence of mercury?

Little, indeed, is known concerning the peculiar nature of the virus of specific diseases: the action which takes place upon the application of the smallest particle of morbific matter to the human body, and the process by which it generates disease, converting a local into a general disorder, and thus producing an altered and vitiated state of the whole system, it must also be admitted, are neither very obvious to the senses, nor very clear to the reasoning powers of man. The effects themselves, however, have been long and familiarly known; and from duly considering these, a rational theory may, perhaps, be formed of the manner in which they are produced.

That the poison of specific diseases, as that of lues venerea, small pox, &c. diffuses itself through the whole constitution, and assimilates unto its own nature the general mass of circulating fluids, seems to be most consonant to all that is understood of their peculiar character. Upon the introduction of a particle of variolous matter into the system, an inflammatory action of the part, into which it is inserted, is excited; by which action new morbific matter of the same nature is generated. This process may be carried on to a

greater or less extent, in a longer or shorter time, in different persons, before the specific material enters the absorbents; and hence local inflammation is, in some cases, considerably advanced before the system becomes affected; while, in others, the eruptive symptoms supervene when it appears to have made very little progress.* The morbid poison, modified in its action by its degree of acrimony, the condition of the part, and habit of body, is taken up by the absorbents and enters the blood-vessels; whence it is received into the general circulation, and produces its peculiar effects upon the constitution. The fluids, therefore, are thus necessarily first affected, and, as a consequence of their morbid condition, the solids themselves next become vitiated. Hence the multiplication of the matter of variolous contagion in inoculated small pox; and hence, on the same principle, the generation of morbific matter, from a similar action, arising from the introduction of other specific contagions.

By the introduction of a specific morbid matter into the body its condition is changed from a healthy to a diseased state, the local is converted into a general disorder; the fluids, and ultimately the solids, become affected; and, according to the particular virus introduced, the whole constitution partakes, in a greater or less degree, of its peculiar nature, whether it be small pox, lues venerea, measles, &c.

The most satisfactory idea, perhaps, that can be formed of the action of morbific poisons on the body, is that of a *ferment*, or rather *an assimilating process*. That such a process does, in certain diseases, take place in the living system has been maintained by many of the most distinguished writers. "It is evident," says Dr. Cullen, "that the contagion of the small pox is a ferment with respect to

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* Woodville's Reports on Cow Pox, p. 15.

the human fluids, and assimilates a great part of them to its own nature."* "Fermentation," remarks the celebrated Mr. Cruickshank, "has been chiefly observed in dead matter, but may also take place, and I believe certainly does take place, in living matter."† In his observations on the action of variolous contagion upon the blood, the most apt idea we can form of it, observes Dr. Walker, "is that of a ferment."‡ See also the experiments of Sir John Pringle,§ and of Dr. Alexander.‖

Mr. Benjamin Bell, though he readily admits that the matter of *all* contagious diseases, and more especially that of lues venerea, has a power of assimilating to its own nature a "certain portion, and ultimately, perhaps, the whole fluids of the body,"¶ cannot easily suppose how such a process can take place in fluids in motion, rest being essentially necessary for promoting fermentation. That the matter of certain specific diseases is conveyed through the circulating fluids, is abundantly evident from the condition of the axillary and other glands in different parts of the body, in small pox, lues venerea, &c. The rapidity with which deleterious and other substances are absorbed and taken into the sanguineous circulation, has been long known, and, lately, satisfactorily shown by the interesting experiments of Delile and Magendie.**

Were the assimilating or fermentative action confined merely to a particular point in the cellular texture, where the specific cause was first applied, how would it be practi-

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* First Lines, vol. 2. Chap. on the Small Pox.

† Anatomy of the Absorbing Vessels.

‡ Inquiry into the Small Pox, p. 49.

§ Diseases of the Army, Appendix.

‖ Experimental Essays, p. 15, &c.

¶ Treatise on Gonor. Virul. and Lues Ven. vol. 2. p. 164.

** Amer. Med. and Phil. Register, vol. 1. p. 426.

cable to account for the generation of new and similar matter in other and distant parts of the body, as for the occurrence of confluent small pox after inoculation. The morbific poison enters the blood, and necessarily combines with some of its constituent parts; if so, it must accompany, and operate upon, this fluid in its general circulation through the system. That this opinion is not hypothetical, but founded on accurate observation, many established facts might be adduced to prove. The effects of the variolous infection on the mother and fœtus in utero, are capable of explanation upon no other principle than that the blood itself is in a morbid state, and assimilated more or less unto the nature of the variolous disease. The free and *direct** communication which exists between the mother and child, while in the fœtal state, will readily be the medium through which the matter of specific diseases exerts its operation upon the impregnated uterus. Dr. George Pearson has recorded many well-authenticated cases, in which the infection of small pox was communicated to the unborn infant, and the matter taken from the pustules on the fœtus, by inoculation infected others.† Two instances of the effects of the variolous contagion upon the pregnant mother and child occurred in the practice of Dr. Hosack, in 1791.‡ Two striking cases of the small pox virus affecting the fœtus in utero were lately published by Dr. Jenner.§ In the first case the infant sickened on the fifth day after birth, and on the seventh well-formed pustules of small pox appeared: the virus was communicated to others by inoculation. In the second case the child

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* MS. Notes on Hosack's Lectures on Pract. of Physic, and on Midwifery.

† Duncan's Medical Commentaries, vol. 19. p. 213. &c.

‡ Duncan's Med. Commen. vol. 19. p. 249.

§ Med. and Chirurg. Trans. vol. 1. See also Eclectic Repertory, vol. 1. p. 4.

upon birth had many eruptions on it, bearing much the appearance of small pox in the early stage of the disease. On the fourth day after birth, "I found," says Dr. Jenner, "the eruptions had increased to some thousands, perfectly distinct, and their character well marked." "To put the matter beyond all doubt," continues Dr. J. "I armed some lancets with the virus and produced the small pox by inoculations with it." Other facts of a similar nature may be found recorded by Mead,* Ludwig,† Burserius,‡ Baron Dimsdale,§ Mr. Hunter,‖ Haygarth,¶ and other distinguished authorities.

In like manner the circulating fluids may become vitiated and assimilated in their nature to the virus of *lues venerea.* The local effects of the disease will appear at different periods in different parts of the body, according to their peculiar susceptibility. The fœtus in utero may also become affected with the poison of the disease, and exhibit symptoms similar to those which arise from the same cause at other periods of life. The general experience of the most eminent practical authors, (with the exception of Mr. Hunter,) has so well established the fact that little further need be said at present concerning it.** The venereal disease may be communicated to the fœtus in utero, and the healthy child after birth may become affected with the same disorder by sucking an infected nurse. Two remarkable cases, in confirmation of the fact last mentioned, occurred in the practice of Dr. Hosack, in the spring of 1807. A healthy

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* Discourse on the Small Pox, chap. iv.

† Adver. Med. Pract.

‡ Institutions of the Pract. of Med. vol. 3.

§ Treatise on Inoculation.

‖ Philos. Trans. vol. 70.

¶ On the Small Pox.

** *Vide* Mahon on the Ven. Infect. in Pregnant Women. Lond. Med. Rev. vol. 2. p. 44.

infant, born of respectable parents, was placed under the care of a wet nurse, and in about four weeks after, eruptions appeared in different parts of its body. The ordinary alteratives were had recourse to without effect: the child became worse; ulcers on the throat and other symptoms strongly resembling those of lues venerea were observed. Mercury was now administered in the form of the solutio oxymur. hydrargy. by which the disease was completely removed. Suspicions being thus confirmed as to the nature of the disorder, the infected nurse was dismissed, with an injunction to undergo a mercurial course. Shortly after, and regardless of advice, she entered into another family in which she again communicated to a healthy sucking infant the venereal disease, which yielded only to the operation of mercury. These two cases render it no longer problematical, but unequivocally prove that an infected nurse may, merely by her milk, communicate a specific disease to her nurseling. They also, still further, render valid the opinion, that not only the blood but the secretions may, to a certain degree, be assimilated in their nature to the virus of certain morbific poisons.

It is asserted by the advocates of vascular spasm, that assimilation is founded on an erroneous and vulgar analogy between a merely chemical action and the operation of the animated body; and it has been urged with much force as an objection to the doctrine of a fermentative or assimilating process taking place in the living system, that such process is always accompanied with ebullition and the extrication of air, phenomena incompatible with the due performance of the functions essential to animal existence. Surely those who have considered this objection of importance have not attended to the ordinary changes which wine undergoes during its *secret* fermentation, as it has lately very properly been denominated; for in these changes neither ebul-

lition nor motion is necessary to the fermenting process by which the wine is matured. "Ebullition, or any evident motion," observes Mr. Cruickshank, "is not necessary to constitute fermentation; after wine has undergone what is called its open fermentation, it continues, after it is bottled, to go through its *secret fermentation*, where no motion is evident, and every body knows requires time to ripen."* Even granting that the extrication of a portion of air is necessarily, at all times, connected with the assimilating or fermentative process, it forms no argument against the principle here advanced: air conveyed slowly into the blood vessels is not destructive to animal life, a fact, which the experiments of Redi, of Florence, and other eminent naturalists have fully established.†

There are two or three other objections urged against the doctrine of assimilation which shall be considered rather on account of the high authority of their author, than of any weight in themselves. In his valuable paper on the origin of contagious and new diseases, Dr. Ferriar asks, "does contagion assimilate all the fluids to its own nature?"‡ The objections which he considers of great force against this doctrine are, that many phenomena in the symptoms and cure of fevers point out a spasmodic affection, or diseased action of the extreme blood vessels as the real cause of fever. In answer to this it may be observed, that the existence of spasm, as essential to the character of fever, rests upon the hypothetical views of those who considered diseases as exclusively affecting the solids, a theory, the absurdity of which has long ago been pointed out. "This affection

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* Anatomy of the Absorbing Vessels.

† Redi, vol. 4. p. 223. as quoted by Sir John Pringle; Diseases of the Army, Appendix, paper vii.

‡ Med. Hist. and Reflect. vol. 1. p. 280. 2d. ed.

[a spasmodic affection] is supported," adds Dr. F. "by the action of contagion, and, perhaps, is strengthened as more contagion is produced." According to this principle, spasm must be the prominent symptom the physician has to subdue in the treatment of contagious diseases, and this spasmodic effect will be the more violent in proportion to the virulence of the particular poison by which it is produced. But where are the facts which warrant conclusions of this nature? Does not the history of contagion uniformly prove its operation on the human constitution to be powerfully debilitating and depressing, and establish a pathological principle directly the reverse of the one maintained by Dr. Ferriar?

Were the fluids infected, observes Dr. F. a patient would not cease to infect others till the whole mass was changed.* It is certainly matter of surprise that this argument should have been offered by a writer who has so long been practically conversant with the operation of febrile infection, and who is so fully aware how numerous are the circumstances which modify the communication of contagious disorders. Why the infected body does not, in *all stages* of disease, infect the bodies of others, is a problem, the solution of which is no less difficult than why contagious diseases themselves do not uniformly operate upon the constitution of all who come within the sphere of their influence. Of the various diseases of specific contagion, small pox is justly considered the most virulent in its nature and the most universal in its operation: yet the many cases of exemption from the action of variolous contagion, particularly of those recorded by Dr. Lind,† will assuredly not lead to the absurdity of

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* Med. Hist. and Reflect. *loc. cit.* p. 281.

† Papers on Contagion and Infection.

denying the specific character of the disease, and that it is propagated by contagion.

Judging from the following passage, which occurs in the essay from which the preceding quotations have been made, it would seem that Dr. Ferriar is by no means convinced of the soundness of his own reasoning. He here appears the decided advocate of the very principle which he elsewhere opposes. "It is peculiar to the animal poisons," says he, "that they not only give rise to a disease similar to their original, but that, however small the quantity applied, *they convert a large portion of the fluids to their own nature.*"*

Analogical proof in support of the doctrine of assimilation might be adduced from considering the changes which the different articles of food undergo when converted into chyle; but the facts already advanced render, in the opinion of the writer, the existence of such a process no longer controvertible.

It appears, therefore, from the changes which take place in the healthy constitution upon the introduction of the peculiar virus of lues venerea, small pox, measles, and other diseases of specific contagion, and from the nature of the alteration which is thereby effected; from the conversion of a local affection into a general disorder, and the multiplication of the particular morbific matter throughout the system; from the communication in all cases of the same specific disease, by inoculation, through the medium of the general circulation, and by the secretions, and from other phenomena which characterize these disorders, that the fluids of the human body are susceptible of material alteration even in the living state: that this alteration uniformly partakes of

* Med. Hist. and Reflect. *loc. cit.* p. 278.

the nature of the morbific matter introduced; that the materies morbi thus generated is alone capable of propagating a disease in another constitution, in all respects of the same character, and none other; in fine, that the circulating mass of the system does become assimilated in its nature to the virus of specific or contagious diseases, and, as a consequence, that the solids themselves also become affected. For such is the general law of the animal economy, modified by the living principle, that the action of one part is subservient to that of the other; while they regularly harmonize in health, they all are acted upon by disease. It has justly been observed, "an exclusive theory, either of solidism or humorism, is a solecism in pathology."

As this alteration in the healthy state of the system, which follows upon the operation of the virus of diseases of specific contagion, is characterized by a regular and peculiar train of phenomena, from observing these effects thus constantly produced, many attempts have been made to ascertain the particular cause. The explanation which has just been offered, seems to convey the most accurate idea of the kind of action which takes place; that the specific matter of these diseases acts as a *ferment*, and by the process consequent thereon, assimilates the system to their own peculiar nature. Doubtless this process is more or less governed by the living principle; and as chemical writers have observed different species of fermentation in inanimate materials, so also pathologists will admit a modification of the same action when occurring in living organized matter. "All that is necessary in fermentation," says an able philosopher already referred to, "is, that the elementary particles be separated and recombined, so that the matter be converted into something different from what it was before."* From

* Cruickshank's Anatomy of the Absorbing Vessels.

the refutation that has been given of the chief objections to this theory, the reader will have already understood the principles upon which it rests.

Secondly. With regard to the changes effected in the system by the influence of mercury.

Mercury, in the state of an oxide, is one of the most universal stimulants. Its action, though primarily on the nervous system, is communicated to every fibre of the body, and produces a degree of restlessness, anxiety, and debility. When taken into the system, it manifests itself by a quickened circulation, gives the blood the disposition to take on the buffy coat when drawn, renders the pulse frequent and harder, increases respiration, excites the temperature of the body, occasions a whitish fur on the tongue, and other symptoms of general inflammatory action. Its effects upon the secretions are still more apparent, producing a preternatural flow of saliva, an increased action of the mucous vessels of the trachea, lungs, digestive organs, chylopoietic viscera, and whole intestinal canal. It excites a copious discharge of urine, and in the smallest quantity operates with great certainty on the skin. In its thus extensive influence on the body, it produces a consequently increased action of the absorbent vessels. These may be considered the more ordinary sensible effects of mercury when its action is not particularly modified by the morbid condition of the constitution.

From the very general and stimulant operation of mercury in promoting the *excretions of the whole system* depends its curative action. This theory of the manner in which mercury produces its salutary effects, was suggested in the lectures on the materia medica formerly delivered by the present professor of the theory and practice of physic in

the University of New-York.* It appears to be deduced from the nature of the changes which this powerful remedy uniformly effects, when its action is not interrupted or changed by adventitious circumstances; and believing it calculated to lead to material improvement in practice, in addition to the facts and reasonings with which it was originally enforced, the writer now offers such others as seem still stronger to confirm its correctness.

It may be asserted as a fact fully confirmed by modern observation and experience, notwithstanding the general opinion of the older writers to the contrary, that the curative operation of mercury, in lues venerea, depends upon the action which it produces throughout the general system: that its sanative powers are in proportion to its uniform effects upon all the secretions, and that the advantages which certain preparations of this mineral possess over those of others, are ascribable chiefly to their action not being confined to the increase of the salivary discharge. In proportion also as the action of mercury is general throughout the system, its tendency to run off by any particular secretion is diminished; and, vice versa, the excitement and consequent increase given to any one secretion almost uniformly produces a diminution of every other.

Admitting these principles to be well founded, it follows that the same salutary effects will not be experienced when the operation of mercury is exclusively directed to the salivary glands, or when it exerts its influence on the intestinal canal alone. Hence, in the administration of this remedy, in lues venerea, in order most effectually to obtain its full operation, it must be introduced into the system in a gradual manner: as it is equally the physician's care to guard

* Doctor David Hosack.

against an undue augmentation of the salivary discharge, as a preternatural increase of the evacuation by the bowels: for, in the former case, by promoting a salivation, the important functions of the skin and other secretions are lessened or suppressed; and, in the latter case, the remedy is prevented from entering into the general system in proper quantity. That the medical virtues of mercury depend principally upon its operation on the exhalent vessels of the general surface, at the same time that it operates upon the other emunctories of the body, is still farther evinced by the superior benefit which is derived from certain preparations of this metal which are known to act almost exclusively in producing diaphoresis; as the combinations of it with the marine acid in the form of the corrosive sublimate. Proofs of a like nature may be drawn from the action of those remedies which are often united with mercury, for the more advantageous treatment of the venereal disease, as antimony, guiaicum, sarsaparilla, opium, &c. Again; experience has uniformly shown, that if the action of mercury in causing diaphoresis be aided by a proper regard to temperature, food, and regimen, and such means as operate upon the skin, its salutary effects are greatly increased: and if its operation be prevented or suppressed by irregularities in diet, or from exposure to cold, they are greatly diminished.

This view of the operation of mercury appears still more clear and satisfactory from considering the influence of climate in the removal of lues venerea. How mild and tractable even the most obstinate and confirmed cases of syphilis become upon the patient's removal to a temperate latitude is familiarly known. Not that the air of Montpellier, of Italy, or of Portugal, possesses, in itself, any peculiar balsamic influence, but that the effect of a temperature, such as these places boast, is calculated to insure the full operation of mer-

cury upon all the emunctories of the body, and to prevent its partial influence on any particular part. In temperate climates salivation is at all times studiously guarded against, not less than the pernicious effects which would arise from the inordinate action of the medicine upon the intestinal canal; and if, while in the employment of mercurial remedies, the least symptom of such effects appears, the use of those remedies is immediately suspended. To restore the tonic powers of the system, if impaired, previous to entering upon the use of mercury, and to support them while under its action, are the principal indications of cure; by these means the constitution is enabled to undergo the necessary alteration, mercury exerts its natural operation, the venereal poison is eliminated, and a radical cure is effected. Those disposed to enter more fully into a consideration of the salutary effects of a temperate climate, &c. in aiding the general operation of mercury, as an anti-venereal, will find the opinions of Mr. Hunter,* on this subject, completely overthrown by the facts recorded in Harris,† Don Ulloa,‡ Clark,§ Moseley,‖ Swediaur,¶ and Vage.** Availing himself of a knowledge of the importance of a warm climate in mitigating the severity of venereal affections, the practical physician, as Dr. Swediaur has justly observed, "will be able to put his patient, in any country whatever, in a situation which he finds necessary for curing this complaint." By keeping him in a mild and uniform temperature, by the occasional use of warm bathing, by enjoining the wearing of flannel, and proper

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* Treatise on the Venereal Disease, 4to. p. 548—9.

† Collection of Voyages and Travels, fol. vol. 2. p. 514.

‡ Voyages to South America, vol. 1. p. 280.

§ Diseases of Long Voyages, vol. 2. p. 440.

‖ Treatise on Tropical Diseases, p. 76, 4th ed.

¶ Pract. Observ. on Ven. Complaints, p. 167.

** London Med. and Phys. Journal.

attention to regimen and diet, a substitute not less efficacious than "climate" is obtained, which eminently contributes to the operation of mercury in eradicating the virus of the disease from the system.

It is not at all contended for in this place, that mercury induces a peculiar morbid state of the fluids, such as some of the other authors denominated dissolved, and which a late writer of the same school, Mr. Howard, terms a "putridity sui generis,"* and that in this manner it throws out offensive matter and effects its salutary ends; but inasmuch as it produces a quickened action of the blood vessels, and a consequent increase of all the secretions, it may justly be considered a most powerful alterative; and as it possesses in a special degree the property of exciting the excretory vessels of the skin, intestinal canal, and kidneys, it arrests the progress of that peculiar operation which, it has been maintained, takes place, upon the absorption of a specific matter into the system, and which, as has already been observed, has significantly been termed by several practical writers the assimilating process.

In the treatment of the diseases universally acknowledged to arise from *specific contagion*, mercury has at length become an active constituent in almost all the various articles employed for that purpose, and there is every reason to believe that the evils resulting from such practice have greatly counterbalanced the advantages. But the consideration of one only of the diseases belonging to this class can here be attempted. Notwithstanding all that has been written, so ill defined are the diagnostic signs of *lues venerea*, whether it assumes the form of a local affection, or operates more immediately on the whole system; so various

* See his Observ. on Ven. Dis. Lond. 1806.

and complicated are its symptoms in its different stages, and so uncertain its course and termination, that there are few complaints which require a more intimate knowledge of their nature in order to effect a radical cure; and it may well be questioned, whether the mal-administration of the remedy has not produced as destructive consequences as the disease itself. The practical observer will recollect how numerous are the diseases arising from causes essentially different from that which gives origin to the venereal, yet, nevertheless, in their characters bearing an exact resemblance to it; that the venereal not unfrequently exists in combination with other disorders; and that from errors in the mode of treatment, not only its nature may become altogether changed, but diseases equally formidable be brought on.

The existence of diseases of the first kind, "wearing the livery" of lues venerea, did not escape the acute penetration of Mr. Hunter; and the subsequent labours of Mr. Abernethy have more fully disclosed their perplexing nature. But as there are no discriminating marks by which they may be distinguished, there is yet no general rule of practice established. The effects of mercury upon them are various. According to Mr. Abernethy, they are sometimes cured by it, sometimes they are only checked, and at other times aggravated.* This, however, is certain, that mercury may be misapplied in the treatment of these anomalous cases; and the practical caution of Mr. Hunter is not to be forgotten; that "it is nearly as dangerous in many constitutions, to give mercury where the disease is not venereal, as to omit it in those which are."† In the diseases of the second kind, it is equally well known, after the removal

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* Surgical Observations, part 2, on diseases resembling Syphilis.

† Treatise on the Ven. Dis. p 381..

of the specific infection for which recourse was had to mercury, that the other symptoms under which the patient may labour are so deceptive, as frequently to be enumerated among the secondary effects of the venereal, and instead of yielding to the power of the same remedy, become more alarming, and if its use be persisted in, terminate fatally. And as far as relates to the cure of the disease, those most conversant with it have furnished sufficient proofs of the pernicious consequences attendant upon errors in its treatment.*

Of these errors the common, and probably the most destructive, is the inducing of profuse salivation, which is generally brought on by throwing into the system large quantities of mercury. To do this in the shortest possible time is the immediate object, and calomel pills, or some other form of mercury, is taken internally, and mercurial unguents or frictions employed. The evident result of such practice cannot fail to be injurious to the constitution. When this discharge is thus excited, it often continues until a total exhaustion of the strength of the patient is the result. In many cases, where it has been thought to have removed the disease, it has proved to be only a temporary cessation of its action; and in other instances, it has converted a comparatively mild disorder into one infinitely more dangerous.

As the venereal arises from the introduction of a specific morbid matter into the system, so the peculiar action of this

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* See the respective publications of Hunter, Bell, Swediaur, and Howard, on the Venereal. Pearson on the effect of various articles in the cure of Lues Venerea. Alley's Observ. on Hydrargyria. Spens' Case of Erythema Mercuriale, Ed. Med. and Surg. Journal, vol. 1. p. 1. M'Mullin on the Erythema Mercuriale, Ed. Med. and Surg. Journal, vol. 2. p. 25. Willan on the Diseases of the Skin, and Mathias on the Mercurial Disease.

matter constitutes the disease. The particular manner in which it produces the various changes from a healthy to a diseased state, in which there exists, in a greater or less degree, an altered and vitiated condition of the fluids, from which source all parts of the body may be affected, is explicable by having recourse to the idea of a ferment, or an *assimilating process*, as most consonant with the phenomena which accompany the operation of the specific matter of lues venerea. The poison of disease is taken up by the absorbents, the local becomes a general affection in a longer or shorter time, according to the virulence of the matter and the susceptibility of the constitution.

Enough, however, has been said to prove that in the treatment of lues venerea such remedies are to be employed as operate more directly in promoting the action of all the secretory vessels of the body, and especially those of the surface; because, as before stated, by this action the morbid process which has taken place will be arrested, and the assimilated matter carried out of the body. Equally opposed, therefore, to the opinion declared by Mr. Bell, that "no advantage is derived from any increase that may be made to any of the secretions,"* and to that of Mr. Howard, who is the advocate for profuse salivation, even in the mildest form of the disease, and who contends, that the greater the discharge the more certain the cure,† the truth lies between them, and the most certain and effectual practice depends upon an increased discharge from the *excretory vessels of the whole system*.

To render plain truths still plainer, and to show, on this subject, more strikingly the incorrectness of Mr. Bell and of

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* Treatise on Gonor. Vir. and Lues Ven. vol. 2. p. 272.

† Observations on the Venereal Disease, vol. 1. p. 297.

Mr. Howard, let it be recollected, that the effect of every preparation of mercury is uniformly evinced by a greater discharge of some of the secretions; and this effect is so constant, that it sometimes takes place from the use of the mineral in a crude state.* In short, as Mr. Hunter remarks, there is no proof of its affecting the constitution without this consequence; and its employment assuredly cannot be followed by any salutary result, unless it operates upon the constitution. But it is useless to dwell on this point, and there are probably few men of observation who will accede to the sentiment expressed by Mr. Bell. The opinion stated by Mr. Howard, of the necessity of profuse salivation in every case, had its advocates at a very early period in the history of this medicine, and though perhaps scarcely any opinion has at different times been more warmly embraced, or more indignantly rejected, it nevertheless at the present day is unfortunately one of the most popular. The older practitioners attempted to justify this absurd and destructive method of treatment, by maintaining that salivation melted down and carried away the serum of the blood which contained all the venom of the venereal disease. At the present time, the practice of exciting salivation seems to owe its general reception to the well-known principle espoused by Mr. Hunter, that no two morbid actions can exist at the same time, and that one irritation destroys another. And yet nothing can be more evident, from Mr. Hunter's writings, than that this very method of cure met in him a decided enemy.

It is of minor consideration to be informed of the causes which have given origin to this mode of treatment; and

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* Mead's Medical Works, vol. 1. p. 106.

painful indeed the recollection of the miseries it has created. No absurdity in medical practice has been the destruction of more lives; none the source of more pain and calamity. Well might Dr. Hoffman pronounce the abuse of this remedy, in the hands of the unskilful, to be more terrible than the sword. Peritiores non sine ratione mercurialia in heroicorum remediorum numerum retulerunt, eo quod ejus indolis ac virtutis sint, ut eorum providus usus valde prodesse, abusus vero validissime nocere possit, *ideoque in manu imperiti tanquam gladius in manu furiosi sint.** The pages of the older writers, as well as those of the modern, fully confirm the fact. Yet this method of cure is still *popular*, still pursued both in private practice and in public institutions.

From the theory which has already been given of the nature and character of lues venerea, the whole system is the seat of the disease, and the indications of cure will accordingly be more readily fulfilled by the employment of those remedies which attack the disorder by their operation on the whole system. Of the various remedies calculated to obtain this end, mercury possesses superior claims, and those preparations of it which more directly act upon the secretory vessels of the surface, for the reasons before mentioned, are to be preferred. A preternatural action of any one of the secretions is not to be depended on, as "it is only a proof of the susceptibility of some parts to such a stimulus,"† and the disease will remain uncured, as is shown from the stationary appearance of local affections.‡ By topical applications, too, local affections may assume the

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* Med. Rational. System. vol. 2. p. 257.

† Hunter on Lues Ven. p. 344. See also Ferriar, Med. Hist. and Reflect. vol. 3. p. 257.

‡ Hunter, p. 341. Saunders on the Liver, 4th ed. Appendix, p. 73.

healthy character, and yet the constitution remain contaminated. Mercury, therefore, to employ the forcible language of Mr. Hunter, must be in a *state of solution in the juices of the body.*

The importance of this method of treatment in confirmed syphilitic cases cannot be too strongly kept in mind; as from a disregard to this principle in the employment of mercurial remedies, are to be traced most of the evils arising from the abuse of mercury; and, perhaps, a majority of the instances of failure in effecting the permanent removal of syphilis, are to be attributed to the same cause. Were the gums alone the seat of the venereal virus, the reasoning of those who contend for the exclusive action of mercury on the salivary glands might be admitted as satisfactory. Few, however, if any, have been the abettors of so absurd an hypothesis, though it affords the only possible ground upon which they can attempt to justify their loathsome and pernicious practice. Wiseman, in his Treatise on the Lues Venerea, has ably exposed some of the principal errors in the management of syphilis, committed by the practitioners of his time;* and more lately, Dease, in his Observations, has placed in a striking light the pernicious effects of the "hot salivating method of cure." The following paragraph, from the pen of Mr. Dease, happily describes the plan of treatment formerly much pursued. It probably has been the lot of the reader to witness a similar practice, not unfrequently followed at the present day, and, singular as it may seem, still recommended with all the weight of professorial authority. "In a confirmed syphilis," says Mr. D. "the hot salivating method of treatment was adopted; the patient was crammed

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* Chirurgical Treatises: viii. on Lues Ven. vol. 2.

into a narrow room, heated with a stove if it could be procured, the admittance of any fresh air was shut out by blankets put up to the door and windows, and a screen surrounded the patient. There he sat, half suffocated in his own hot, putrid atmosphere, and was rubbed with mercurial ointment until his tongue generally lolled out; the inside of his mouth was covered over with sloughs." "In this hideous pickle," continues Mr. D. "he was to lie for twenty-five or thirty days."* That numerous were the victims to this empirical plan of cure will not excite surprise.

If the view which has been taken of the nature and seat of the venereal disease be well founded, and the circumstances which modify its character and method of treatment be correctly stated, much also depends upon a judicious choice of the different mercurial preparations. Those combinations of mercury must possess a decided advantage which are least calculated to excite the salivary discharge, and whose operation is general throughout the system. Of the various preparations of this mineral, now in most general use, the oxygenated muriate of mercury, or, as it is commonly called, the corrosive sublimate, (the *oxymurias hydrargyri*, L. P. *murias hydrargyri*, E. P. *murias hydrargyri corrosivum*, D. P.) is particularly recommended for this purpose. This form of mercury, like every other, has had many opponents and adherents. It is thought by some to have been first employed as an anti-venereal by Basil Valentine;† but, upon the authority of the celebrated Van Swieten, it came into general use only in 1754, and the favourable reports of its efficacy "would fill," says Mr. Pear-

* Observ. on the different methods of treating the Ven. Dis. Dublin, 1779.

† Pearson on the Effects of Various Articles, &c. p. 100.

son, "a volume of considerable magnitude." In the number of its most decided advocates may be found the distinguished names of Locher, De Haen, Pringle, Cleghorn, Gorden, Russell, Stoll, Lewis, Dease, and Selle.

Among the principal advantages which the corrosive sublimate possesses over that of every other preparation of mercury are, that, judiciously administered, it is particularly mild and safe in its operation, will admit of a more extensive use in all the various forms of lues venerea, and subject the patient to fewer inconveniences: that it readily enters into the general circulation, becomes miscible with the several fluids of the body, the soonest arrests the progress of the complaint, and eliminates the morbid matter through those emunctories best calculated for that purpose: that it supersedes the necessity of salivation, by its action on all the secretions, and by promoting especially the cuticular discharges, and the evacuations from the kidneys: that it is the only preparation to be depended on in those peculiar habits of body so susceptible to become salivated by every other form of mercury now in use: that in its ultimate effects upon the constitution, it is attended with comparatively no injury. These facts are indeed truly important, and many of them are granted by those who altogether reject the use of this preparation.

It is not a little unfortunate for the advocates of other combinations of mercury, that the objections which have been brought against the corrosive sublimate are so dissimilar. It has been assigned as a reason against the preparation itself, that it has failed of its salutary effects by being given in too small doses. By some its anti-venereal properties are said to be lost on account of its too readily exciting the cuticular discharge; by others it is owing to its defective action on the secretions of the skin and mouth. By

some it is admitted to be beneficial in the primary stage of the disease, and by others it is contended that it is calculated to remove only secondary symptoms. It is also declared that it is violent and uncertain in its operation, and that it does not render the cure permanent.* Some of these objections are, indeed, weighty, and, were they well founded, would fully justify the abandonment of this peculiar combination of mercury; but if the least reliance is to be placed upon the experience and observation of those who have employed the corrosive sublimate with the most disinterested and honourable views, and solely to determine upon its anti-venereal powers, evidence sufficient to prove the fallacy of these objections, and derived from indubitable sources, might be adduced. The testimony of Dr. Locher, of the Vienna hospital, is so full and explicit, that it were an omission not to insert it. Having witnessed the "horrid calamities" arising from salivation and other abuses which existed in that institution in the management of venereal patients, upon the recommendation of Van Swieten, he made trial of the corrosive sublimate. From the year 1754 to 1762, he cured by it no less than four thousand eight hundred and eighty persons, *without inducing salivation;* and testifies, that "no persons died, or experienced the least painful and dangerous symptoms, in consequence of this remedy."† In the cases in which the same preparation was recommended by Pringle,‡ the cures that were effected were permanent, and from the repeated experience of many other distinguished practitioners, the same result ensued. Multa nobis ex-

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* Hunter, Howard, Pearson, Mathias, and others.

† Locher's Observat. Pract. as quoted by Van Swieten, Commentaries, vol. 17. p. 294.

‡ Gorden, Lond. Med. Obs. and Inq. vol. 1. p. 365. vol. 2. p. 73.

empla visa sint luis venereæ, murcurio sublimato corrosivo perfectè sanatæ.*

To enter into a consideration of the treatment of the various symptoms which characterize lues venerea in its simple and in its more confirmed state, is not deemed necessary, nor will it here be attempted. Fully convinced, as the writer is, of the decided advantages which the corrosive sublimate, as an anti-venereal remedy, possesses, in most cases, over other mercurial preparations, he cannot forbear adding a few further observations for the purpose of recommending to more general use this combination of mercury.

A very forcible reason why a preference ought to be given to the corrosive sublimate as an anti-venereal remedy, is the mildness of its operation when compared with most other mercurial preparations. In the mind of the judicious practitioner, there need exist no apprehensions of the severity of its action; few articles of the materia medica can be more readily accommodated to the peculiar condition of the patient and the nature and stage of the disease. The evidence of its mildness may be adduced from the salutary effects which it produces in the constitution of delicate children, and even of infants. In not a single instance, within the recollection of Dr. Hosack, has it ever been followed by pernicious consequences, though long employed by him in many cases in which the patient laboured under some hereditary taint, obstinate cutaneous eruption, or other symptoms indicating an alterative course of remedies. The destructive effects which have been mentioned as attending its administration, such as excessive pain and irritation of the stomach and bowels, headach, fever, &c. may, in cer-

* Ratio Medendi, pars secunda, p. 229. See also Medica Clinica, by Christian Gottlieb Selle. Berlin, 1802.

tain cases, arise from some peculiarity of constitution obnoxious to mercurial remedies, but are doubtless, in general, to be attributed either to the improper preparation of the corrosive sublimate, or to its having been given in undue quantity. It has been asserted that this mercurial salt is particularly injurious to those labouring under pulmonary affections. That this objection is ideal, or rather that, of all mercurial preparations, it applies with least force against the corrosive sublimate, must be evident upon considering the general operation of this form of mercury. Every combination of this mineral may prove more or less injurious in the forming stage of consumption, on account of the active inflammation which is then present, and the additional irritation attendant upon mercurial action. For it may be laid down as a general principle, that mercury is in itself injurious when administered to any considerable extent during the existence of inflammation and febrile excitement, and before the employment of blood letting or other evacuants.

From the mild operation of the corrosive sublimate, properly prepared, may be inferred the utility of its employment in persons of delicate habit, and in those cases especially where the constitution is materially impaired. In cases of this kind its exhibition is followed with the best effects. That the tonic powers of the system may, however, in certain instances, be so far weakened as to render the employment of every form of mercury not only inefficacious in the removal of syphilitic complaints, but productive of the most distressing symptoms, and, consequently, that the use of the oxygenated muriate will at times be the cause of much inconvenience and real suffering, there is left no room to doubt. In irregular cases of this nature, the remedy necessarily fails of producing its ordinary beneficial effects; and as it becomes an additional source of irritation,

it greatly increases the debility which already prevails. These effects, as has just been remarked, do not result from the exclusive employment of any particular form of mercury; they seem to arise less frequently from the corrosive sublimate, but are common to all mercurial preparations. For if the constitution has not the power to support the action of mercury, vain is the attempt to eliminate from the system the virus of lues venerea. Hence, in the treatment of certain diseases of hot climates, especially in unhealthy situations, it is not an uncommon practice to administer the bark daily during the whole course, for the purpose of enabling the constitution to bear a sufficient quantity of mercury to subdue the complaint.* Upon the same principle that learned physician and distinguished writer, Dr. Chisholm, maintains, that in the management of disease a reduction of plethora at the commencement, and the augmentation of the vis vitæ in the advancement, are to be particularly attended to, in order to ensure the successful administration of mercury.† Dr. Ferriar has observed instances in which the venereal disease itself assumed a peculiar character owing to debility; where the debility so far prevailed that the constitution had not power to form a genuine syphilis. When this happens, mercury will not effect a cure. "Under these circumstances," adds Dr. Ferriar, "I have advised with success a course of tonics without mercury, to raise up the constitution to a higher level. Mercury may then be expected to cure."‡

It was deemed proper to make these few remarks on the condition of the system necessary to ensure the successful operation of mercury, not only from the circumstance of its

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* *Vide* Clark on the Diseases of Long Voyages.

† Essay on the Malignant Pestilential Fever, vol. 1.

‡ Med. Hist. and Reflect. vol. 3. p. 253.

being too generally overlooked, but because it strengthens the belief that the pernicious effects which have been so hastily attributed to the corrosive sublimate, might have been more satisfactorily accounted for by adverting rather to the debilitated state of the constitution than to the acrid nature of the preparation itself.

Difficult as it is to establish any diagnostic signs by which the depredations of *Venus* and of *Mercury* on the human constitution may be accurately distinguished, enough is known concerning the nature of mercurial affections to lead to the abandonment of that indiscriminate recourse to the external application of this mineral, which has now become so general. Mr. John Pearson states that the mercurial eczema, or erythema, as it is also called, may arise after the employment by friction of a single drachm of mercurial ointment, and after the internal use of a dose of calomel: and were it necessary to say any thing in corroboration of this fact, the writer might detail the particulars of a case of vesicular eruption that lately came under his notice, which occurred in an adult patient to whom had been administered eight grains of calomel. The vesicles first appeared, and were confined, chiefly about the anterior and superior part of the chest and on the chin; they were of the size of an ordinary split pea, of a pale or rather light gray colour, unaccompanied with inflammation or fever, and strongly resembled the eruption described by Dr. Willan, in his fourth order of Cutaneous Diseases.* The serous fluid they contained was discharged on the second or third day, and the excoriated surface readily healed. But notwithstanding that the internal as well as external use of mercury, even in small quantity, will, in certain habits, give origin to the mercurial ery-

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* *Vide* Cutan. Diseases; order Bullæ, III. Genus, sp. i.

thema, yet a careful examination of what has been written on the subject seems to warrant the conclusion that this form of disease arises, in a great majority of instances, from mercury externally applied. If this opinion be well founded, it presents strong additional arguments in favour of the internal use of the corrosive sublimate as an anti-venereal remedy.

That the corrosive sublimate, of all mercurial preparations, soonest affects the system and arrests the action of the venereal virus, is a truth grounded upon the concurring experience of the most distinguished practitioners.

It is but proper to state, that the preparation of mercury now recommended, has been employed for the last twenty years in the private practice of Doctor Hosack, and during his attendance at the New-York State Prison, New-York Hospital, and the Alms-house of this city, as physician of those institutions. It has invariably been found to be the remedy best calculated for the removal of lues venerea, both in its primary and secondary stages; and not a single case is recollected in which the cure has not been permanent. Those injurious effects upon the stomach and bowels, which are so much apprehended, were avoided by a cautious employment of the medicine, and by a due consideration of the peculiarities in the constitution and state of the patient. From this form of mercury, salivation scarcely ever was induced; and while under its influence, the employment of the decoct. guaiac. et sarsaparil. was found to be an excellent auxiliary in recent cases; and in the secondary stage of the disease, where the patient had been neglected, or when improprieties in the cure had been committed, it was almost indispensable.

Though satisfied that the oxymuriate of mercury possessed full claims to the title of a powerful anti-venereal remedy, from a perusal of the testimony published in its favour, and from a personal knowledge of the result of several cases in

which it had been employed; with the view of more fully determining so important a matter, and to ascertain, as far as practicable, whether the objections which have been stated against it, particularly those of the distinguished Mr. John Pearson, were founded in reality, at the suggestion of the writer, the use of the corrosive muriate of mercury was adopted in the spring of the year 1811, in the New-York Hospital, by Dr. John C. Cheesman, the then house surgeon. From the extensive charity which this excellent institution afforded, there was abundant opportunity of seeing almost every form of this disease, from the more mild to the most aggravated; cases of recent infection and those of long standing. After a careful examination of the histories of a great variety of cases, a selection was made of several of those patients who were affected with the primary, and of others labouring under the secondary stages of this disease. The corrosive sublimate was given in some instances in the form of the spirituous solution, and in other instances made into pills; the decoction of guaiacum and sarsaparilla was employed as an auxiliary, and occasional recourse was had to the application of the lunar caustic; but the external use of every preparation of mercury was omitted. In no one instance were unpleasant effects produced by the action of this mercurial salt; and, contrary to the opinion entertained by Mr. Pearson, of the efficacy of this remedy, the result of these several cases was attended with complete success.

To multiply further arguments, or offer additional proofs in favour of the oxygenated muriate of mercury does not seem necessary. It may be confidently pronounced a safe, convenient, and efficacious remedy in lues venerea. How far a too ready acquiescence in the force of authority may be assigned as the cause of that want of confidence in the virtues of the corrosive sublimate, and of that appre-

hension of its pernicious qualities which at present prevail among many practitioners, it is impossible to ascertain. It is evident that the opinions of Mr. Pearson are those chiefly which have been adopted and reiterated by every subsequent writer who has opposed the use of this mercurial combination. But the success attendant upon the administration of the oxymuriate of mercury furnishes the most satisfactory answer that can be given to those who have denied its efficacy. Upon the successful result of the cases of lues venerea which existed in the New-York Hospital in 1811, the corrosive sublimate again became the principal anti-venereal remedy in that extensive establishment. This form of mercury, since that period, has also been in general use in the New-York Alms-house, in the treatment of syphilis in its different stages; and in most instances it is now employed for the same purpose by the physicians of the City Dispensary. The observation and experience of the writer during the last three years, in a number of unequivocal cases of lues venerea, have tended to corroborate the favourable opinion he formerly expressed,* and induce him to recommend with increased confidence a more extended application of this preparation of mercury.

Various are the forms in which the corrosive sublimate has been used in the different stages of lues venerea, and in other disorders indicating an alterative course of remedies. Its external application, in the form of ointment, has been recommended by some; but against this practice many

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* *Vide* An Inaugural Dissertation on Mercury: embracing its Medical History, Curative Action, and Abuse in Certain Diseases. *New-York*, 1811. The present communication, and a former one on the same subject, which appeared in the Register for April, 1813, may be considered as constituting the collegiate exercise just mentioned, though now in some parts enlarged and perhaps somewhat improved.

forcible objections might be brought. The internal use of the spirituous solution of Turner, in which the proportion of ardent spirits to the mercurial salt was remarkably small, has justly been accused as the source of much mischief. The formula of Van Swieten deserves a decided preference; for the muriated quicksilver dissolved in spirits and exhibited in doses limited to the quantity of one eighth of a grain, two, or, at most, three times in twenty-four hours, seldom produces the least nausea, or any derangement of the stomach or bowels.

The corrosive sublimate, dissolved in common brandy, in the proportion of two grains of the salt to one ounce of the liquid, is a valuable and convenient preparation for delicate children. It may be given with the greatest safety, in a little sweetened water, to the amount of three or four drops to a child of one year, and repeated three times a day; and to a child of two or three years old six or eight drops three times a day. After its employment two or three days the dose may be increased to ten or twelve drops.

A solution of the oxymuriate of mercury in common distilled water, with the addition of a little muriated ammonia, (sal ammoniac,) is also a judicious and safe pharmaceutical combination.

But the best form of administering the corrosive sublimate is that in which this mercurial salt, united by solution with the muriate of ammonia, is made into a mass with the crumb of wheat bread, and then divided into pills.

℞. Oxymuriat. Hydrarg.
Muriat. Ammon. aa gr. xv.
Aq. distillat. vel. font. ʒiss. Solutioni addatur
Panis medul. sic. q. s.
Ut fiat massa, in pil. cxx. dividenda.

Every pill in this prescription contains, if the materials be uniformly combined, the eighth of a grain of the corrosive sublimate. The dose can therefore easily be regulated with the greatest accuracy. Of these pills one is to be taken every night and morning, though, in some aggravated cases, another pill may be taken at the middle of the day with additional advantage. In this manner a quarter of a grain of this preparation of mercury will, in ordinary cases, be taken in twenty-four hours; and in the more severe form of lues venerea the additional eighth of a grain. Instances may occur in which it may be advisable to administer half a grain daily. Mr. Bell has given a grain of the corrosive sublimate divided in four or five doses, but has not been able to continue this quantity for more than two or three days together.

The corrosive sublimate to the amount of one quarter of a grain a day, and, in some cases, an additional eighth of a grain, in pills, may be continued for a long time without producing the least inconvenience in the stomach and bowels, and with greater certainty and more beneficial effect than the same quantity of this salt in the form of the spirituous solution. The use of the corrosive sublimate ought to be continued two or three weeks after the disappearance of the disease, in order more effectually to accomplish a radical cure.

It has already been observed, that the oxygenated muriate of mercury operates more readily on the constitution than any other form of this mineral, and that even in very small quantity it soonest arrests the progress of venereal symptoms, and, by its general action, eliminates the poison of the disease. It deserves to be stated that during the use of this preparation, all those precautionary measures with regard to diet and regimen, which are generally recommended by writers, need not be regarded with the same scrupulous

attention, while in the use of the corrosive sublimate, as during the employment of other mercurial medicines. For as the corrosive sublimate rarely affects, to any considerable degree, the salivary glands, those subjected to its use are not rendered so susceptible to the influence of cold, and the physician is seldom under the necessity of devising means for the purpose of obviating the pernicious consequences of salivation. Instances of peculiarity of constitution may occur which require much management and discretion in the use of this remedy. Mr. Bell has observed, that opiates have not the same influence in preventing an undue action of the oxymuriate of mercury upon the stomach and intestinal canal which they commonly have with other mercurial preparations.* The limited experience of the writer has not in any case corroborated this opinion: on the contrary, he has found an occasional recourse to small quantities of opium highly serviceable.

As some one or more articles of the vegetable kingdom are in general employed in those cases in which the corrosive sublimate is administered, it perhaps would not be irrelevant to examine how far they are entitled to particular confidence. It may be proper to remark, that of the many substances which have been employed as auxiliary remedies, or are now in use, the *lignum guaiaci* and the *radix sarsaparillæ* unquestionably claim the first notice. They are acknowledged to be useful during the administration of the oxymuriate of mercury, in cases of recent affection; and in the secondary symptoms of the disease, for the removal of the evils which have taken place from the injudicious employment of mercury, &c. their salutary operation has been uniformly evinced.

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* Treatise on Gonor. and Lues Ven. vol. 2. p. 248.

The compound decoction of guaiacum and sarsaparilla may readily be prepared in the following manner:

℞. Rasur. ligni guaiac.
Rad. sarsapar. fissæ aa. ℥i.
Coq. in aq. font lbiij. ad lbij.

Of this decoction the above quantity, taken warm, ought to be drunk within the twenty-four hours. Of its effects as a powerful alterative for the removal of some of the most painful symptoms of lues venerea and obstinate cutaneous affections, indubitable evidence exists in the pages of the old and in those of the most eminent modern authors.* During a period of more than forty-five years its virtues for these purposes have been tested in the practice of that learned and distinguished physician, Dr. Samuel Bard, and for more than twenty years in the practice of Dr. David Hosack. Its salutary properties appear to be owing chiefly to the general excitement which it produces and to its action as a diaphoretic. When had recourse to, while in the use of mercury, particularly in the treatment of those cases where the disease is of long continuance, it proves eminently useful by promoting the natural tendency which the corrosive sublimate possesses to increase the cuticular discharge.

The compound decoction of the guaiacum may be taken with success for the removal of many of the morbid effects produced by the improper employment of the different preparations of mercury, and for restoring the constitution to its wonted vigour. The advantages arising from the use of the *Rob Anti-syphilitique*,† for which so enormous a consi-

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* *Vide* Aphrodisiacus, Ed. Boerhaavii. Also, Hunter, Bell, &c.

† *Vide* M'Neven's Account of the Rob of Laffaeteur, in New-York Med. and Phil. Journal, vol. 3. p. 23.

deration is demanded, may with confidence be attributed principally to the sarsaparilla which enters into its composition.

As the local effects which arise from the venereal virus depend upon constitutional irritation, or the action of lues venerea upon the constitution, these effects in most cases are to be permanently removed by those remedies only which operate through the medium of the whole system. But the consideration of the local applications best calculated as efficient auxiliaries for the removal of these consequences is at present purposely omitted.

JOHN W. FRANCIS.

VI.

Case of Hydatids *in the* Uterus. *By Dr.* Jonathan Eights, *Albany.*

About the 20th of April last, I was requested to visit Mrs. C——, when she gave me the following account of her situation and complaints. She is about twenty-eight years of age, has been the mother of three living children, and has had two abortions, of which one was at the period of three months, and the other about seven months after conception. During the months of June and July, 1813, she experienced a severe attack of fever, of which she perfectly recovered by the first of August, at which time she supposed herself pregnant, and during the first four months, experienced the usual symptoms, such as nausea and vomiting, faintings, (to which she had been subject in former pregnancies,) a swelling of the breasts, and a gradual enlargement of the abdomen. When about six months advanced, she became alarmed at her condition, not having discovered any motion of the fœtus,

and experiencing also a heaviness and bearing down in the lower part of the abdomen. In this situation she continued until the ensuing April, except that the heaviness increased and her health evidently declined. About the middle of this month she was seized with a discharge from the vagina of a bloody matter, which was evacuated with a sudden gush. These discharges occurred every day, and, at last, became so frequent, that she was seldom free from them. She had no pain except in the right side, and this was most severe at the period of the discharges. On examining the patient externally, I could not discover any inequalities or hardness in the abdomen, but a uniform surface, with the bulk of a woman when about seven months advanced in pregnancy. On examination, *per vaginam*, the uterus was found low down in the pelvis, and the os tincæ so far opened as to admit the tip of the fore finger. The uterus, which appeared to be filled with some soft substance, was completely distended. Mrs. C—— was at this time troubled with a violent cough and night sweats, and complained of a loss of appetite, and a great degree of thirst, although the quantity of urine evacuated was not less than usual. Her countenance was sunk and her spirits greatly depressed. I endeavoured to convince her of the necessity of not permitting herself to be thus affected, and flattered her with the hopes of a favourable termination, intimating at the same time my suspicion that the uterus contained hydatids.

In order to relieve the cough, I administered the common pectoral mixture, and to restore her appetite and restrain the night sweat, I gave the sulph. acid. dilut.: by the use of these remedies, these symptoms were relieved. I then ordered the tinct. mur. ferr. gtt. xij. ter in die. This medicine was persisted in until the 12th of May, at which period I was again requested to visit her. She then informed me that the watery discharges had ceased for some time, but that she

had discharged during the day some small clots of blood; that she had regular pains, with much bearing down, and these increased in frequency, and that she felt much as in former labours, except that the pains were more rending: her abdomen had somewhat increased in bulk and hardness. On examination, I found the os uteri dilating, and ascertained that the substance in the uterus was soft and very tender, the finger meeting with little resistance.

In the evening I again saw her; the pains had become more severe, and, on introducing my hand, I found the os uteri much dilated, and it met the contents of the uterus, which, in endeavouring to bring away, broke, and on examination I found the part thus discharged to be hydatids, attached to some pulp like albumen. The pains continuing, she discharged about a gallon of hydatids, differing from the largeness of a pullet's egg to the size of a pea. After the discharge, she felt free from pain; there was little or no evacuation from the uterus, but about the third day she became uneasy and feverish, and shortly after had a copious secretion of milk. She is now recovering (June) as well as any woman who has been confined in child-birth. Her countenance, which was considerably distorted, has become natural, her abdomen is completely reduced to its natural size, and her appetite is returning. I have directed her to continue the use of the tinct. mur. ferr. both as a tonic and to destroy any remains of hydatids; being firmly convinced that this medicine has been the principal means of destroying these singular animals.

July 28. The patient is now in perfect health.

REVIEW.

Art. I. Collections *of the* New-York Historical Society, *for the year* 1814. *Volume second.* New-York. Van Winkle and Wiley. 8vo. pp. 353.

Catalogue *of the Books, Tracts, Newspapers, Maps, Charts, Views, Portraits, and Manuscripts, in the Library of the* New-York Historical Society. New-York, 8vo. pp. 139.

The appearance of a second volume of these Collections so shortly after the publication of the first,* speaks favourably of the progressive condition of the New-York Historical Society. That it is proceeding according to the original design of its founders, and fulfilling the high expectations of its friends, are evident upon a view of the contents of the volumes with which they have already favoured the public. To collect and preserve whatever documents relate to the natural, civil, literary, medical, and ecclesiastical history of the United States, and particularly of the state of New-York, is their principal object: collateral topics of inferior consideration are not however disregarded. It has before been stated that the New-York Historical Society was encouraged to this undertaking by the laudable and successful efforts of Belknap, Eliot, Minot, Sullivan, Thacher, and the other distinguished projectors of a similar institution in Massachusetts. Long may these associations continue emulous of that renown which is sure

* See Register, vol. 2. p. 427.

to attend the cultivation of the best interests of science and literature.

The prefatory matter of the volume now before us contains some particulars concerning the present state of the association, a list of the honorary and resident members, and the interesting *memorial*, from the pen of the Hon. De Witt Clinton, drawn up in behalf of the society, and presented to the legislature in the winter of 1813-14. It is gratifying to add, that this able and manly appeal to the liberality of that enlightened body was not made in vain: for promoting the important objects of the society the munificent grant of twelve thousand dollars has been appropriated at the last session of the state legislature. We shall briefly notice the separate papers which compose the body of the work.

A Discourse on the Benefits of Civil History, delivered before the New-York Historical Society, Dec. 6, 1810. By Hugh Williamson, M. D. LL. D. &c.

Dr. Williamson, who is familiarly known as the historian of North Carolina, takes, in the present discourse, a short but interesting view of the principal circumstances which formerly caused so small a share of attention to be paid to the cultivation of historical knowledge: having noticed the general neglect among ancient nations to preserve authentic records of their events, and the consequent uncertainty and incorrectness with which the occurrences of former times are related, even by the best ancient writers, he dwells upon the pleasure and advantages which arise from the study of civil history, and points out its importance as a mean of promoting human happiness. We bear willing testimony to the excellence of Dr. Williamson's Discourse; it is evidently the result of much reading and reflection: the concluding

paragraph, which is all that our limits will permit us to transcribe, contains suggestions which it is hoped have not been made in vain.

" The more cause we have to lament the general defects in ancient history, and the more cause we have to complain that there is hardly a country on the face of the earth whose original settlement and consequent progress can be discovered, the more industrious this society should be to preserve a small section of the globe, or the settlement and progress of a small colony from the great tomb of oblivion. It is not only our duty to have it faithfully recorded, how this part of the world was settled by civilized men, but also to show in what manner, and by what means, the inhabitants increased in useful knowledge and virtue; for it is not to be questioned, that a great proportion of the first settlers had but a small share of learning; and some of their chief officers were very deficient in virtue. Posterity will take little interest in knowing that the inhabitants may have doubled their number in twenty years; but they may be desirous to know by what means the subjects had obtained such a degree of information, toward the end of the eighteenth century, as to understand the principles of civil liberty, and contend successfully for their rights. Posterity will expect to be informed, and it will be your duty faithfully to record, what steps were taken in this eventful epoch, about the beginning of the nineteenth century, to promote virtue and the general stock of knowledge among the people. It was observed by a great philanthropist, that fewer criminals are incarcerated in Scotland or in Switzerland than in any other part of Europe. The reason he assigns for this difference is, that the common people in Scotland and Switzerland are more generally instructed than in any other part of the civilized world. They are more generally taught to read, and are taught the principles of the christian religion, the foundation of good morals. His reasoning on this subject was doubtless correct. For ignorance is the fruitful parent of vice; and the man who knows his duty is most likely to attend to it. In this critical period, it will therefore

be the duty of government to multiply the means of instruction; it will be their duty to see that every citizen is taught to read, at whatever expense that may be done; and you will take a pleasure, for the benefit of posterity, in recording the fact. Posterity may be desirous to know, and it will be your duty to record, whether men in public trust, instructed as they are by ancient history, and by the recent fate of European republics, had been careful to check the dangerous progress of internal faction; to preserve peace; to cultivate harmony among their fellow citizens, and to retain the confidence and affection of the sister republics."

A Discourse, delivered before the New-York Historical Society, on the 6th December, 1811. *By the Hon. De Witt Clinton, one of the Vice Presidents of the Society.*

"As it is not uninteresting, and is entirely suitable to this occasion," observes Mr. Clinton, "I shall present a general, geographical, political, and historical view of the red men who inhabited this state before us; and this I do the more willingly, from a conviction that no part of America contained a people which will furnish more interesting information and more useful instruction; which will display the energies of the human character in a more conspicuous manner, whether in light or in shade, in the exhibition of great virtues and talents, or of great vices and defects."

A subject so replete with pleasure and instruction, as a faithful account of the aborigines of this state unquestionably is, must naturally excite the highest expectations when treated of by one possessed of the acknowledged abilities of the author of this Discourse. We have accordingly read with no ordinary satisfaction the present production of Mr. Clinton, and rejoice to find committed to so able a pen the depicting the character of a people,

in every respect the most remarkable of the savage tribes of North America. A better and more effectual means of refuting the unjust and illiberal aspersions of Raynal, Buffon, Robertson, and others on the aborigines of this country, could not have been resorted to, than the one chosen on the present occasion.

Than the Confederates,* no people of whom we read have been more eloquent in debate, or more daring in the field; and had fame been just to their memory, their reputation would have rivalled that of the heroes of Greece and Rome.

> Vixêre fortes ante Agamemnona
> Multi: sed omnes illacrymabiles
> Urgentur ignotique longâ
> Nocte, carent quia vate sacro.
>
> HORACE.

Mr. Clinton has furnished many interesting and circumstantial details concerning the territorial limits of this extraordinary people; their habits, manners, domestic economy, &c. &c. but for which the reader must be referred to the discourse itself. We cannot, however, forego the present opportunity of enriching the pages of the Register with the following extracts.

"The Confederates," says Mr. Clinton, "had proceeded far beyond the first element of all associations, that of combination into families; they had their villages, their tribes, their nations, and their confederacy; but they had not advanced beyond the first stage of government. They were destitute of an executive

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* The Confederates were also denominated, by the English, the Five Nations, the Six Nations; by the French, the Iroquois; by the Dutch, the Maquas, or Mahakuase; by the Southern Indians, the Massawomacs; by themselves, the Mingoes, or Mingoians, and sometimes the Aganuschion, or United People; their confederacy they styled the Kenunctioni.—*See the Discourse, p. 44.*

and judiciary to execute the determinations of their councils; and their government was therefore merely advisory, and without a coercive principle. The respect which was paid to their chiefs, and the general odium that attached to disobedience, rendered the decisions of their legislatures, for a long series of time, of as much validity as if they had been enforced by an executive arm.

"They were originally divided into five nations, the Mohawks, the Oneidas, the Onondagas, the Cayugas, and the Senekas. In 1712, the Tuscaroras, who lived on the back parts of North Carolina, and who had formed a deep and general conspiracy to exterminate the whites, were driven from their country, were adopted by the Iroquois as a sixth nation, and lived on lands between the Oneidas and Onondagas, assigned to them by the former.*

"The Mohawks had four towns and one small village, situated on or near the fertile banks of the river of that name. The position of the first was at the confluence of the Schoharie Creek and Mohawk River, and the others were farther to the west. This nation, from their propinquity to the settlements of the whites, from their martial renown and military spirit, have, like Holland, frequently given their name to the whole confederacy, which is often denominated the Mohawks in the annals of those days; and it may be found employed in the pages of a celebrated periodical writer of Great Britian, for the purpose of the most exquisite humour.† This nation was always held in the greatest veneration by its associates. At the important treaty of 1768, at Fort Stanwix, by Sir William Johnson, they were declared by the other nations "the true old heads of the confederacy."‡ The Oneidas had their principal seat on the south of the Oneida Lake, the Onondagas near the Onondaga, and the Cayugas near

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* Smith's New-York, p. 46. Douglas' Summary, p. 243.

† Spectator.

‡ The proceedings of this treaty were never published. I have seen them in manuscript, in the possession of the late Vice President Clinton.

the Cayuga Lake. The principal village of the Senekas was near the Genessee River, about twenty miles from Irondequoit Bay. Each nation was divided into three tribes; the Tortoise, the Bear, and the Wolf; and each village was, like the cities of the United Netherlands, a distinct republic, and its concerns were managed by its particular chiefs.* Their exterior relations, general interests, and national affairs, were conducted and superintended by a great council, assembled annually in Onondaga, the central canton, composed of the chiefs of each republic; and eighty sachems were frequently convened at this national assembly. It took cognizance of the great questions of war and peace; of the affairs of the tributary nations, and of their negotiations with the French and English colonies. All their proceedings were conducted with great deliberation, and were distinguished for order, decorum, and solemnity. In eloquence, in dignity, and in all the characteristics of profound policy, they surpassed an assembly of feudal barons, and were perhaps not far inferior to the great Amphyctionic Council of Greece. Dr. Robertson, who has evinced, in almost every instance, a strong propensity to degrade America below its just rank in the scale of creation, was compelled to qualify the generality of his censures in relation to its political institutions, by saying, "If we except the celebrated league which united the Five Nations in Canada into a federal republic, we can discern few such traces of political wisdom among the rude American tribes as discover any great degree of foresight or extent of intellectual abilities."†

"A distinguished feature in the character of the confederates, was an exalted spirit of liberty, which revolted with equal indignation at domestic or foreign control. "We are born free, (said Garangula in his admirable speech to the governor general of Canada,) we neither depend on Ononthio, or Corlear," on France, or on England. Baron Lahontan, who openly avowed his utter detestation and abhorrence of them, is candid enough to

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* See Charlevoix, Colden, &c.

† Robertson's America, vol. 1. p. 435.

acknowledge, that "they laugh at the menaces of kings and governors, for they have no idea of dependence; nay, the very word is to them insupportable. They look upon themselves as sovereigns, accountable to none but God alone, whom they call the Great Spirit." They admitted of no hereditary distinctions. The office of sachem was the reward of personal merit, of great wisdom, or commanding eloquence; of distinguished services in the cabinet or in the field. It was conferred by silent and general consent, as the spontaneous tribute due to eminent worth; and it could only be maintained by the steady and faithful cultivation of the virtues and accomplishments which procured it. No personal slavery was permitted:* their captives were either killed or adopted as a portion of the nation. The children of the chiefs were encouraged to emulate the virtues of their sires, and were frequently elevated to the dignities occupied by their progenitors. From this source has risen an important error with respect to the establishment of privileged orders among the confederates.

There is a striking similitude between the Romans and the Confederates, not only in their martial spirit and rage for conquest, but in their treatment of the conquered. Like the Romans, they not only adopted individuals, but incorporated the remnant of their vanquished enemies into their nation, by which they continually recruited their population, exhausted by endless and wasting wars, and were enabled to continue their career of victory and desolation: if their unhappy victims hesitated or refused, they were compelled to accept of the honour of adoption. The Hurons of the Island of Orleans, in 1656, knowing no other way to save themselves from destruction, solicited admission into the canton of the Mohawks, and were accepted; but, at the instance of the French, they declined their own proposal. On this occasion the Mohawks continued their ravages, and compelled acquiescence: they sent thirty of their warriors to Quebec, who took them away, with the consent of the governor general; he, in

* Colden, vol. 1. p. 11.

fact, not daring to refuse, after having addressed him in the following terms of bold defiance; which cannot but bring to our recollection similar instances of Roman spirit, when Rome was free.* "Lift up thy arm Ononthio, and allow thy children, whom thou holdest pressed to thy bosom, to depart; for if they are guilty of any imprudence, have reason to dread, lest in coming to chastise them, my blows fall on thy head." Like the Romans, also, they treated their vassal nations with extreme rigour. If there were any delay in the render of the annual tribute, military execution followed, and the wretched delinquents frequently took refuge in the houses of the English to escape from destruction. On all public occasions they took care to demonstrate their superiority and dominion, and at all times they called their vassals to an awful account, if guilty of violating the injunctions of the great council. At a treaty held on the forks of the Delaware, in 1758, by the governors of Pennsylvania and New Jersey, with the Six Nations, several claims of the Munseys, Wapings, and other Delaware Indians, for lands in the latter province, were adjusted and satisfied under the cognizance of the Confederates, who ordered them to deliver up their prisoners, and to be at peace with the English, and who assumed a dictatorial tone, and appeared to exercise absolute authority over the other Indians.† At a former conference on this subject, a Munsey, or Minisink Indian, had spoken sitting, not being allowed to stand, until a Cayuga Chief had spoken; when the latter, thus expressed himself, "I, who am the Mingoian, am by this belt to inform you that the Munseys are women, and cannot hold treaties for themselves; therefore I am sent to inform you, that the invitation you gave the Munseys is agreeable to us, the Six Nations." p. 48—53.

"War was the favourite pursuit of this martial people, and military glory their ruling passion. Agriculture, and the laborious drudgery of domestic life were left to the women. The

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* Heriot's History of Canada, p. 79. *(This work is a compilation principally from Charlevoix.)*

† Smith's New-Jersey, 446, &c.

education of the savage was solely directed to hunting and war. From his early infancy, he was taught to bend the bow, to point the arrow, to hurl the tomahawk, and to wield the club. He was instructed to pursue the footsteps of his enemies through the pathless and unexplored forest; to mark the most distant indications of danger; to trace his way by the appearances of the trees, and by the stars of heaven, and to endure fatigue, and cold, and famine, and every privation. He commenced his career of blood by hunting the wild beasts of the woods, and after learning the dexterous use of the weapons of destruction, he lifted his sanguinary arm against his fellow creatures. The profession of a warrior was considered the most illustrious pursuit; their youth looked forward to the time, when they could march against an enemy, with all the avidity of an epicure for the sumptuous dainties of a Heliogabalus. And this martial ardor was continually thwarting the pacific counsels of the elders, and enthralling them in perpetual and devastating wars. With savages in general, this ferocious propensity was impelled by a blind fury, and was but little regulated by the dictates of skill and judgment; on the contrary, with the Iroquois, war was an art. All their military movements were governed by system and policy. They never attacked a hostile country, until they had sent out spies to explore and to designate its vulnerable points, and whenever they encamped, they observed the greatest circumspection to guard against surprise; whereas the other savages only sent out scouts to reconnoitre; but they never went far from the camp, and if they returned without perceiving any signs of an enemy, the whole band went quietly to sleep, and were often the victims o their rash confidence.*

"Whatever superiority of force the Iroquois might have, they never neglected the use of stratagems; they employed all the crafty wiles of the Carthaginians. The cunning of the fox, the ferocity of the tiger, and the power of the lion, were united in

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* Colden, vol. 1. p. 110. Heriot, p. 15.

their conduct. They preferred to vanquish their enemy by taking him off his guard; by involving him in an ambuscade; by falling upon him in the hour of sleep: but when emergencies rendered it necessary for them to face him in the open field of battle, they exhibited a courage and contempt of death which have never been surpassed." p. 54—5.

"The conquests and military achievements of the Iroquois were commensurate with their martial ardour, their thirst for glory, their great courage, their invincible perseverance, and their political talents. Their military excursions were extended as far north as Hudson's Bay. The Mississippi did not form their western limits; their power was felt in the most southern and eastern extremities of the United States. Their wars have been supposed, by one writer, to have been carried near to the Isthmus of Darien.* And Cotton Mather, in his Magnalia, which was probably written in 1698, describes them as terrible cannibals to the westward, who have destroyed no less than two millions of other savages." p. 58.

"The Confederates were as celebrated for their eloquence as for their military skill and political wisdom. Popular, or free governments, have, in all ages, been the congenial soil of oratory. And it is, indeed, all important in institutions merely advisory; where persuasion must supply the place of coercion; where there is no magistrate to execute, no military to compel; and where the only sanction of law is the controlling power of public opinion. Eloquence being, therefore, considered so essential, must always be a great standard of personal merit, a certain road to popular favour, and an universal passport to public honours. These combined inducements operated with powerful force on the mind of the Indian; and there is little doubt but that oratory was studied with as much care and application among the Confederates as it was in the stormy democracies of the eastern hemisphere. I do not pretend to assert that there were, as at Athens and Rome, esta-

* Rogers' America, p. 209.

blished schools and professional teachers for the purpose; but I say, that it was an attainment to which they devoted themselves, and to which they bent the whole force of their faculties. Their models of eloquence were to be found not in books, but in the living orators of their local and national assemblies: their children, at an early period of life, attended their council fires, in order to observe the passing scenes, and to receive the lessons of wisdom. Their rich and vivid imagery was drawn from the sublime scenery of nature, and their ideas were derived from the laborious operations of their own minds, and from the experience and wisdom of their ancient sages.

"The most remarkable difference existed between the Confederates and the other Indian nations, with respect to eloquence. You may search in vain in the records and writings of the past, or in events of the present times, for a single model of eloquence among the Algonkins, the Abenaquis, the Delawares, the Shawanese, or any other nation of Indians, except the Iroquois. The few scintillations of intellectual light; the faint glimmerings of genius, which are sometimes to be found in their speeches, are evidently derivative, and borrowed from the Confederates." p. 70—71.

The preceding quotations may furnish the reader with smoe of the more prominent features in the characters of these "Romans of the Western world." Mr. Clinton, with no less ability, has described the present condition of the Six Nations, and pointed out the principal circumstances which have caused them to lose their formerly distinguished and elevated standing.

"The causes of their degradation and diminution, are principally to be found in their baneful communication with the man of Europe; which has contaminated their morals, destroyed their population, robbed them of their country, and deprived them of their national spirit. Indeed, when we consider that the discovery

and settlement of America have exterminated millions of the red men, and entailed upon the sable inhabitants of Africa, endless and destructive wars, captivity, slavery and death, we have reason to shudder at the gloomy perspective, and to apprehend that, in the retributive justice of the Almighty, "there may be some hidden thunder in the stores of Heaven, red with uncommon wrath;"* some portentous cloud, pregnant with the elements of destruction, ready to burst upon European America, and to entail upon us those calamities which we have so wantonly and wickedly inflicted upon others." p. 84.

The discourse concludes with a very becoming notice of the numerous remains of ancient fortifications, those proud monuments of Indian ingenuity and labour. The author considers all the hypotheses which attribute those works to Europeans, as incorrect and fanciful: 1st, on account of the present number of the works; 2d, on account of their antiquity, having from every appearance been erected a long time before the discovery of America; and finally, from their form and manner being totally different from European fortifications, either in ancient or modern times.

Upon the whole, it will readily appear that this discourse is not calculated merely for the purpose of gratifying present curiosity, but that it lays claim to a permanent place among the contributions to the stock of general knowledge. Mr. Clinton has performed for the Confederates what Tacitus did for the Germans.

A Discourse delivered before the New-York Historical Society, 6th December, 1812, by the Hon. Gouverneur Morris, First Vice President of the Society.

The State of New-York may justly be considered as the

* Addison's Cato.

most important member of the federal union: whether we regard her numerous population, her commercial advantages, or her immense internal resources, her claim to this distinction is equally well founded. Her present prospects, moreover, warrant the assertion that her future standing among her sister states will be still more pre-eminent: this opinion is the result of a minute view of the progressive condition, population, resources, &c. &c. of the several states, composing the American confederation, from their first settlement to the present time.

In the performance before us, Mr. Morris has presented some reflections "on prominent historical facts, and geographical circumstances, which distinguish the State of New-York." This the honourable orator has done at considerable length, and in a very able manner: and has taken occasion to intersperse throughout the discourse many interesting and judicious observations.

"On a cursory glance at the map of North America, our eye is caught by that deep indent, where Long Island, (whose eastern point lies between thirty and forty leagues west of the south end of Nantucket shoal,) after stretching thirty leagues, on a course but fifteen degrees to the southward of west, is separated by a deep bay from the main land, whose general direction, from Sandy Hook to Cape Hatteras, is but seventeen degrees to the westward of south. The upper end of that bay, divided from the lower by Staten Island, is nearest to the valley which embosoms the great lakes, the St. Lawrence, and the Mississippi, of any sea port on the Atlantic; and the hills which intervene are neither so numerous, so lofty, nor so steep, as those by which other routes are obstructed. The city of New-York, at the head of this bay, from causes which will probably endure as long as the earth itself, is generally accessible; and the navigation to it is frequently open when that of more southern situations is barred by frost. The channel on the west end of Long Island, though

broad and deep, may be so obstructed as to frustrate hostile attempts. The other channel, whose mouth is two degrees to the eastward, and therefore of easier and safer access in dark bad weather, presents a secure and pleasant passage till within eight miles of this city. There a rapid whirlpool and projecting rocks (our Scylla and Charybdis) render it so narrow and difficult, that, although perfectly safe at a proper time, and with a good pilot, it may easily be rendered too hazardous for an enemy. By the first of these channels, vessels outward bound, within a few hours after casting off from their moorings, gain the open sea. By the second, those which arrive can, with common prudence, reach safe anchorage without a pilot; and the distance from the mouth of the one to that of the other is such that both cannot easily be blockaded by the same squadron. These circumstances alone point out New-York as a commercial emporium.

"But there are others which contribute largely to the same effect. Beside many small streams, the great Connecticut River pours its waters into the eastern channel; and the western shore of Manhattan Island is washed by the Hudson, navigable fifty leagues by large vessels; and what is peculiar to this noble canal, ships take with them a favouring tide beyond all the ranges of mountain east of that great valley already mentioned, which stretches upward of fourteen hundred miles in a southwestern direction from the island of Orleans, in the Lawrence, to the city of Orleans, on the Mississippi. To this valley an inland navigation from the Hudson can easily be extended northward to the St. Lawrence, and westward to the great lakes, whose depth, whose extent, whose pellucid water, and whose fertile shores, are unparalleled. It is probable, that if our western hemisphere had been known to antiquity, those immortal bards who crowned their thundering Jove on the peak of Olympus, would have reared to commerce a golden throne on the granite rock of Manhattan. They might have pictured her as receiving, in a vast range of magazines from Haerlem village round to Haerlem cove (a distance of twenty miles) the willing tribute of mankind; as fostering industry in the remotest regions; scattering on barren shores that plenty which nature had denied; dispensing to millions the

multiplied means of enjoyment, and pouring the flood-tide of wealth on this her favoured land. Not, indeed, that wealth which, the plunder of war and the wages of vice, exalts a rapacious head over a servile crowd; but that honest wealth, which, accompanied by freedom and justice, comforts the needy, raises the abject, instructs the ignorant, and fosters the arts. Such are the outlines of a picture which, adorned by classic colouring, might, with the Iliad, have been recommended to his royal pupil by that sage whose mind, acute and profound, was equally skilled in moral, physical, and political science." p. 120—2.

"Our state will support a population of four millions. Already it exceeds nine hundred thousand white inhabitants, although twenty years ago it was but little more than three hundred thousand. When, therefore, the salubrity of our climate, the fertility of our soil, the convenient situations for manufacturing establishments, and our advantageous position for trade, are considered, there is reason to believe the period not distant when we shall count four million inhabitants: and, certainly, our wealth, if we are blest by a good government, must keep pace with our population. New-York, connected with her eastern brethren and New-Jersey, had, in 1810, more than two million and a half of white inhabitants; wherefore we may reasonably conclude, that in half a century they will contain eight millions; for in 1790 their number was short of one million and a half, and in 1800 was near two; having increased about one third in each term of ten years, but more than three fourths in the whole term of twenty years, viz. from 1,476,631 to 2,597,634. Though not distinguished as a manufacturing people, yet, judging by those fruits which the inventive genius of our fellow citizens has produced, we may reasonably foster, even in that respect, exulting expectations. Numerous on land, we are not strangers at sea. Our country abounds in iron, and the use of it is not unknown to her children." p. 136.

Mr. Morris's discourse is written in the usual style and spirit of the author, and will in no way diminish his established reputation.

A Discourse delivered before the New-York Historical Society. 6th Dec. 1813, *embracing a concise and comprehensive account of the Writings which illustrate the Botanical History of North and South America: by Samuel L. Mitchill, M. D. one of the Counsellors of the Society, &c. &c.*

In executing the present arduous undertaking, Dr. Mitchill acknowledges himself greatly indebted to the valuable *Catalogue* of J. Francis Seguier which was completed about 1740, and to a still more elaborate performance, the *Bibliotheca Botanica* of Haller, which was published at London during the years 1741 and 1742. But these works, extensive and able as they are pronounced to be, are in several respects defective: and when it is recollected that more than forty years have elapsed since the appearance of the last of these productions, it will at once be perceived that a complete catalogue, extending to the present time, of the writers on the vegetables of North and South America is a desideratum in botanical science. Dr. Mitchill has attempted to supply this deficiency in the present instance; and it is but justice to say that his performance is a key to much valuable information; that he has aptly arranged the labours, and, with few exceptions, estimated with fidelity the merits of the respective writers whom he has noticed; that, upon the whole, this discourse is creditable to his diligence and learning.

The articles already noticed are those only which may properly be considered as *original*; the subsequent part of this volume of the Collections contains *An account of Monsieur De La Salle's last Expedition and Discoveries*

in North America; presented to the French king, and published by the Chevalier Tonti, governor of Fort St. Louis, in the province of the Islinois. This very scarce and important tract is reprinted from the London edition of 1698. *An Extract of a Translation of the History of New Sweed land in America, written in Sweed, by Thomas Companius Holm, late of New Sweed land, al's Delawaare,* and printed at Stockholm, A. D. 1702. This communication which was favoured the Society by Dr. Mease of Philadelphia, furnishes some valuable information concerning this Sweedish Colony and its reduction in 1655, by the Dutch of New-York, under the command of Governor Stuyvesant.

For the extensive and well-arranged *Catalogue* annexed to this volume, the Society is indebted to the Rev. Timothy Alden, A. M. &c.

ART. II. *Transactions of the Society for the Promotion of* USEFUL ARTS *in the State of New-York. Vol.* III. Albany. Websters and Skinners. 8vo. pp. 262. 1814.

THE excellent address of Dr. Beck, on the mineralogical resources of the United States, and of which due notice was taken on a former occasion,* constitutes the first communication, in the present volume, of the transactions of this praise-worthy institution. Next follows an *eulogium* on the late chancellor of this state, the Hon. ROBERT R. LIVINGSTON, LL. D. the original president, and it may be added, the founder and chief patron of this society. This eulogium is from the pen of the Rev. Timothy Clowes, A. M. and was pronounced by appointment, in the city of Albany, on

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* Register, vol. iv. p. 255.

the 31st of March, 1813. The tribute which is here paid to the memory of the deceased chancellor was richly merited by a long series of various and important services which this great and excellent man rendered his country: the account of his life and character now furnished by Mr. Clowes affords a successful effort of the talents of the orator.

The third communication in the present volume is an *Address on the Botany of the United States*, delivered before the society on the 9th of February, 1814; to which is added, a *Catalogue of Plants* indigenous to the state of New-York, by Jacob Green, A. M. &c. &c. As the labours of our indigenous writers, in exploring the natural resources of this country, and in furnishing accurate accounts of the vegetable and mineralogical productions of America will be more beneficially and more sensibly felt than by their directing their attention to any other departments of science, the contribution now made to the stock of botanical information cannot fail to be received with approbation. Mr. Green appears to be fully sensible of the importance of his subject; and accordingly, with much propriety, points out some of the principal advantages which we possess for the study and improvement of the botany of North America. His observations on a number of the plants of this country which claim particular notice from the agriculturalist, the manufacturer, the artist, and the physician, are calculated to call the attention of the American farmer and of others to a more general cultivation of this source of domestic revenue. Two or three extracts from Mr. Green's address may with much advantage and propriety be here republished.

"The curious and beautiful Candle Berry Myrtle (Myrica Cærifera) is very abundant in many parts of the United States. The wax which this tree yields would amply compensate the trouble of obtaining it. In Maryland, on the shores of the Chesapeake, and near most of the streams which flow into that

bay, it is found in large quantities. It is also scattered over this state growing in a wet soil, and very rarely exceeding five or six feet in heighth. The plant, however, is not confined to marshy grounds. I have seen it on upland in Connecticut, rising to the height of ten or twelve feet. This species indeed is rarely seen, and the berries are not so abundant in this as in the other kinds.* In Louisiana there is another species of this tree as large as the cherry, bearing pointed leaves,† (Myrica Cærifera Angustifolia;) those of the other being broader and more obtuse; (Myrica Cærifera Latifolia.)‡ In France the myrtle is cultivated for its wax,§ which is prepared by simply boiling the berries in water; the wax rising to the top of the vessel. It is apt to be of a pale green colour, which is not reckoned handsome. This however may probably be remedied by throwing some alkali into the boiling water, which will convert the wax into a deep green. The experiment indeed I have not attempted, but there can be no doubt of its success. By chemical agents it is probable that almost any colour may be given to this wax. From four pounds of the berries, one pound of wax is obtained, superior in quality, and applicable to all the purposes of bees wax. Candles made of it afford a clear white flame; and if burned newly made, they emit an agreeable, and, it is said, a salubrious odour. Should the myrtle wax excite proper attention it might be highly advantageous to medicine as well as to the arts."‖

"Opium has also been extracted from the common lettuce (Lactuca Sativa) simply by evaporating the juice of the plant. Eight heads of full grown lettuce yielded, in one instance, seven drachms of opium. Hops also contain a large quantity of the

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* I rather think the Connecticut myrtle wax tree is only a variety of the species which is found in a wet soil.

† Medical Repos. vol. 12, p. 191.

‡ Two varieties of this tree are found at the Cape of Good Hope. Barrow's Tour in Africa, p. 18, Am. ed.

§ Medical Repos. vol. 12, p. 192.

‖ For the medicinal qualities of the myrtle wax, see Barton's Collections, part 2, p. 4—and for experiments on its analysis, Dr. Bostock's Memoir, in Nicholson's Journal, March, 1803—and for the mode of propogating the tree and manufacturing the wax, C. L. Cadet's Account, Nicholson's Jour. vol. 4th.

narcotic principle, and the extract of hops is now in use in some places as an anodyne. Indeed we abound in every species of anodyne plants, and the country physician, with a little care, might supply himself with opiates from his own garden.

"But I must observe that the opium of the poppy is not the only benefit which its cultivation would afford.—From the seeds an oil may be extracted as salubrious and agreeable as the finest Florence oil.—The quantity of this oil which is consumed, and the frequent difficulties which attend its importation, would make the extraction of it from the poppy a lucrative employment.* I am glad to state that in Pennsylvania some acres of ground are planted with the poppy for this purpose. As the quality of the olive oil is much affected by the acidity or richness of the soil in which the plant grows, it would be well to notice these circumstances in the cultivation of the papaver.† It is hardly necessary to add that the opium and the oil may both be extracted from the same plant.

"Large quantities of Sugar are annually extracted from the Maple tree, (Acer Saccharinum) in many parts of the United

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* There have been many doubts suggested respecting the wholesome qualities of this oil—but the question that it is not deleterious is now settled—See the Abbé Rosier's experiments, quoted in Archives, vol. 2, p. 176.

† At Harmony, half a day's ride from Pittsburgh, (both places objects of very great interest) the settlers use oil expressed from the poppy seed, exclusively, in lieu of olive oil, for sallads, &c. It is nearly if not quite equally good. This oil is becoming common in Europe as a substitute for olive oil. The poppy seed may be eaten with impunity when ripe. I do not see why its use should be confined to the settlement of Harmony. The Ben, Bene, or Benni seed common in the Carolinas, can furnish, as I am informed, oil enough to supply the United States at a cheap rate. I have eaten the oil of the Ben or Behen nut in England, and I find no difference between it and the olive oil. Why should this last be imported? But I doubt whether the Ben or Behen nut be the same with the Benni seed. I suspect this last to be the *Sesamum*;* but I have never seen it. The Behen nut, *Glans unguentarius*, *Balenos murepsiki*, is the fruit of the *Guilandina Moringa*. The oil is prepared in the Levant, in Egypt, in Syria, and in Italy, by expression. It is valuable for its purity, and its freedom from smell and taste, and for its property of remaining long without alteration or rancidity, which makes it extremely valuable in pharmaceutical preparations. *Rees' Encyclopædia.*

* *The author is correct in his conjecture: the benni is now well ascertained to be the* sesamum orientale *of Linn.* Ed. of the Rev.

States; and the subject has already received the attention of some writers.* I shall therefore in this place notice only the Sugar Cane, (Saccharum Officinarum:) this was introduced into Georgia a few years since and has been found to grow there in great perfection.† The saccharine matter of the Georgia cane is quite as rich and plentiful as that from the cane of the West-Indies. It is supposed that most of the land in that state near the coast, south of Sansbury, may be converted into sugar plantations; and since it is pretty well ascertained that more cotton is raised than the manufactories of that article consume, the sugar cane might be advantageously substituted for it.‡ The interests of humanity, however, would not be advanced by the exchange, as they employ more slaves to make the sugar than to cultivate the cotton.

"The Fiorin grass, or Agrostis Stolonifera, is a native of the United States.§ Our fellow member Charles Whitlow first discovered it in Sussex county, New-Jersey, and afterwards on the margin of the Genesee river. It grows also in great profusion on the island below this city.‖ Dr. Mease mentions that he found it on the commons of Philadelphia. This I believe to be incorrect. It is the Agrostis Cappillaris ¶ and not the Stolonifera, which is seen in that place.

"The Fiorin grass has excited much attention in this country, since the introduction of Merino sheep; these animals being remarkably fond of it, and the grass, from its succulent qualities,

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* See American Philo. Trans. for an important paper on the maple tree, by Dr. Rush.

† Medical Repos. vol. 12, p. 192.

‡ Dr. Mease recommends the raising of the papaver in room of the cotton.

§ There are six species of the Agrostis mentioned by Dr. Muhlenberg as natives of this country: two of these are new species; the Capillaris is among the number, but not the Stolonifera. See Muhlenberg's Floræ Lancastriensis, in American Philos. Trans. vol. 3, p. 160.

‖ On this island is found the Avena elatior and in the small compass of 6 feet I have seen 6 or 8 different species of grass.

¶ Archives of Useful Knowledge, vol. 2, p. 278.

being well adapted for their fodder. Indeed, most cattle prefer it as food to the other grasses; and it is particularly proper for cows, as it is said to increase the quantity and to improve the quality of their milk.

"The advantages in agriculture of the Agrostis are of no recent date. There is a species of it called Durva, growing in the north of India, which for a long time has been very greatly prized. Sir William Jones in his catalogue of Indian plants, when speaking of this, observes "its flowers in their perfect state are among the loveliest objects in the vegetable world, and appear through a lens like minute rubies and emeralds, in constant motion from the least breath of air. It is the sweetest and most nutritious pasture for cattle, and its usefulness, added to its beauty, induced the Hindus in their earliest ages, to believe it the mansion of a benevolent nymph. Even the Veda (or holy and immortal book) celebrates it in the following text from the Athervana.* "May Durva which rose from the water of life, which has a hundred roots and a hundred stems, efface a hundred of my sins and prolong my existence on earth a hundred years."†

"Among the many superior qualities of the Fiorin grass are the following: Its active principle of life, which is not destroyed by the operations of nature fatal to other grasses. It thrives equally well in a moist, a dry, and a shallow soil. It appears little affected by the influence of the sun. Hence it may be found growing near the north side of a wall. It is regardless alike of the severe cold of winter, and the intense heat of summer. Its crops are enormous and double; both crops, in one instance, amounted to nearly eight tons and a half per acre,‡ and in another ten tons were gathered.§

"The propagation, culture and properties of the Fiorin grass have been unhappily exaggerated by the lovers of new improve-

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* The fourth great division of the Veda.

† Quarterly Review, vol. 1st, p. 307.

‡ Archives of Knowledge, vol. 2, p. 273.

§ See Edinburgh Farmer's Magazine.

ments; who, not satisfied with advantages which are really peculiar, attribute to this herb every fancied desideratum. Yet, after making sufficient allowances on this score, the Fiorin grass has unquestionably many excellencies, which ought to give it the highest standing in this class of vegetables."

"The Urtica Whitlowi, discovered in the year 1810, by Mr. Whitlow, promises to be a better and more lucrative production than hemp or flax. Dr. Muhlenberg gave this important plant its present name in compliment to the discoverer. It is found in great abundance on the island below this city; a place perhaps more fertile in plants, than any other, of equal dimensions, in the United States.

"The fact is now well established, that the culture of hemp offers a greater profit to the farmer, than if he should employ his time, his labour, and his field in any other manner heretofore known: but if the Urtica has a finer and stronger fibre, and will produce more on a given portion of land, it will eventually supersede the hemp.

"The soil best adapted to the Urtica is wet meadow land; and it will thrive in ground covered with water many months in the year. It grows also to advantage in a rich, moist, upland loom. It can be raised from the seed or root, as it is a hardy perennial. The seed should be planted in the spring, and the roots in the fall months. If the fibre is wanted for the finest fabrics, the plant should be cut while in full flower; but if only for common use, it will yield more by standing till completely ripe. After being cradled, which is the most proper way to cut it, the stalk should be suffered to lie on the ground some days, as the stinging quality, which is peculiar to the growing nettle, is thus removed. The Urtica is rotted in the same manner as hemp, only it requires a longer time for the purpose: but it is not affected by the inclemency of the weather.

"The legislature of this state, at their last session, incorporated a company for the manufacture of this plant, and the

United States have granted a patent to Mr. Whitlow for its discovery."*

"Though not critically proper in a discussion on botany, I may be allowed the liberty of introducing in this place a few observations on some colouring vegetables. The late discovery of the Zanthorhiza Tinctoria in the United States promises to be extensively useful. This shrub is found on the Alleghany ridge from Virginia to Georgia, and it probably may be found on most of the upland country. The extract, or even decoction of the whole plant, forms a fine yellow dye, which may be varied by saturation or dilution, from the brightest straw colour to the deepest orange. In combination with indigo, or most other blues, all the different shades of green may be produced. The stain which it makes on cloth is not apt to fade or wear off, and it may also be applied without using any mordant. Specimens of cloth dyed with the Zanthorhiza were shown to the society last winter. This plant also possesses many medical virtues.†

"Isatis Tinctoria, or Woad, is well known as a blue, and still better as the basis of black. The colouring matter is obtained from the leaves. The plant can be raised here with little trouble, and in great abundance. In the neighbourhood of this city there are some fields planted with it. The Isatis, in conjunction with the Zanthorhiza, gives us the three principal dies in colour making.

"The Galium Tinctorium is also one of our native plants. It flourishes most in places sheltered from the sun, and where the ground is rather moist. This plant so nearly resembles the Madder (Rubia Tinctorium) in its botanical character, as well as in its colouring properties, that some writers have given it the name of Rubia Americana. The Galium is employed by the inhabi-

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* For many interesting particulars respecting the cultivation of this valuable nettle, examine a paper published by the corporation of the city of New-York, and the Baltimore Medical and Philosophical Lyceum.

† See Barton's Collections, part 2, p. 11, 12, and 13.

tants of Jura, one of the Hebrides,* as a red die, and it is perhaps equal to the rich red of the Rubia itself. Upon turning over the pages of our Transactions, I find that the Galium has already received your attention and patronage.† The true Rubia was raised last summer at Pittsfield by Mr. E. Watson, who will, I understand, read you in the course of the winter a paper on this article. The Rubia has for a long time been raised in Connecticut, but only in gardens. I understand the Shakers have also planted it.

"The cochineal plant (Cactus Coccinellifer) has been discovered in South Carolina, where it can be cultivated to any extent. We may therefore reasonably hope that the invaluable die extracted from the insect which gives this plant its name, and which always accompanies it, will speedily be numbered among our staple productions.‡

"The juice of the common pokeberry (Phytolacca Decandra) has lately been added to the list of permanent vegetable dies. Dr. Adam Seybert, of Philadelphia, was the first who succeeded in fixing this colour, which can be changed from the brightest crimson to a red, little inferior to scarlet. It is expected from the further discoveries which are likely to be made on this colour, that the cochineal, which is so expensive, may be generally dispensed with.§

"The Quercitron, a species of oak, and native of this country only, has long been esteemed for producing a yellow dye. Dr. Bancroft, who first carried it to Europe, received a patent from the English government for its introduction there, and acquired a large fortune by the enterprise. The pulverized bark was the state in which the quercitron was imported and used. But works are now erected at Fitchburgh, in Massachusetts, for obtaining the extract of the quercitron, by a new process; which contains

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* Encyclopædia Britannica, article Jura.

† Agricultural Trans. vol. 1st, p. 367.

‡ Archives of Knowl. vol. 1st, 257.

§ See Aurora, October 5th, 1812.

the virtues of the bark in substance in a very condensed state. One pound of this extract affords as much colouring matter as fifteen or twenty pounds of the pulverized bark."* p. 77, &c.

Mr. Green's Catalogue of Plants indigenous to the state of New-York very properly accompanies his address. Though this catalogue might have been enlarged by the addition of some other genera and species which have been naturalized, and now grow spontaneously, the author has thought it more proper to confine the list to those which are indigenous. Few, however, of the cryptogamous tribes are here inserted, Mr. Green designing, on some future occasion, to treat of this class more at large. The author candidly acknowledges the assistance he has derived from the collections of plants made by Messrs. Le Conte, Pursh, Eddy, Beck, and others.

The communication from the present president of the society, Simeon De Witt, Esq. is on *drawing in perspective mechanically*. It contains an account of the diorascope, an instrument lately constructed by the author for the purpose of attaining a greater degree of accuracy in military perspective. To the account of his diorascope he had added a description of the dioragraph. But an accurate idea of Mr. De Witt's improvements cannot be conveyed without the engravings which illustrate his paper.

E. C. Genet, Esq. member of the National Institute of France, &c. has furnished three interesting papers: No. I. —*Remarks and Notes on Colours.*

"America," observes Mons. Genet, "supplies Europe with several articles used for dying, and possesses many others kept secret by the Indians, or used by private families for their own good. I have collected all the information I could on these native

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‡ See Literary and Philos. Repos. for Nov. and Decem. 1812, p. 148.

dies, and thinking that the friends of science must be liberal, and that concealment and philosophy ought to be as far distant as the arctic pole is from the antarctic, I shall offer here the result of my remarks on a great variety of vegetable colours which I have tried, and I shall conclude these notes by a description of the method used in France to make the solution of tin, and to procure with the assistance of that invaluable mordant the best and most durable scarlet, dark blues, and black.

List of native vegetable substances which contain colouring principles, and the mordant which will best set them.

Vegetables.	*Colours.*	*Mordant.*
Poplar,	Yellow,	Alum and soda,
Apple trees,	do.	———
Locust,	do.	do.
Persimmon,	Crimson,	do.
Oak trees,	Steel colour,	Copperas.
Nut trees,	Olive,	do.
Maples,	Purple,	do.
Sassafras,	Red,	do.
Madder,	do.	do.
Stone fruit trees,	Cinnamon and nankeen colour,	Alum and soda.
Sumac, hazel nut, and alders,	Black,	Copperas.
Woad,	Blue,	Solution of tin.
False Indigo,	do.	do.

"Several fruits yield also very handsome colours, with proper mordants. The berries of the pokeweed or pigeon berry (Phytolacca) give an elegant red equal to the cochineal. The blue huckleberry or whortleberry (Vaccinium) gives a blue superior to the mazarine, and the winter grape, resembling very much the dier's grape of the French, called *noireau*, gives the finest violet.

SOLUTION OF TIN.

"To prepare this mordant, the French chemists take two parts of spirit of nitre and one of fuming spirit of salt. They dissolve in this liquor the purest tin that can be procured; they granulate it and throw it by degrees in the mixture. The quantity of tin must be to that of the liquor as one to twenty, though more tin may be added if the liquor will dissolve it. To use this mordant it must be diluted in two or three parts of clear stream water, according to its strength, until it is found to have the acidity of vinegar or lemon juice.

SCARLET.

"To make the best scarlet, three parts of water to one of solution of tin are mixed together, and to procure the different shades and varieties of light red, rose, and orange, the quantity of cochineal and mordant must be reduced.

BLUE.

"To give a dark and unchangeable blue colour to wool, the French and German manufacturers mix one part of pulverized indigo of the best quality with eight parts of vitriolic acid, well concentrated, and leave it without being disturbed twenty-four hours. They then add by degrees to the mixture ninety-six parts of pure and soft water, and stir it repeatedly. The wool dipped into it comes died with a dark blue colour. If the colour, however, is too dark, and approaches too much to the black, it may be rendered lighter by soaking the wool or cloth a whole day in a bath composed of twenty-four parts of pure and soft water and one part of sea salt well dissolved and cold. Alum may also be used as a mordant for indigo, and if wool or cloth are immerged after it has been died with that mordant in a bath containing a solution of soda, it will acquire a darker colour. The same method will apply to silk, but not at all to linen and cotton.

BLACK.

"To make a handsome black, the wool must first be died blue, and afterwards blackened with the usual ingredients. The pericarpium, or husk, which covers the hazel nut when green, is used

in France in preference to any other substance to procure a handsome black. The husks of our nuts and the witch hazel (hamamelis virginica) might equally be used to advantage; but the hazel nut husk, if they could be collected in sufficient quantity, would be far preferable." p. 50—2.

No. II.—*On the economical utility of the Apocinum Cannabinum, or Indian Hemp, and the Asclepias, or Milkweed, natives of the State of New-York.* In this valuable paper, the principal object of Mons. Genet is to consider the economical benefits which may arise from the proper cultivation of these vegetables. The author has been informed that ropes and yarn made from the fibres of the apocinium were far superior, for strength and durability, to those made of flax and hemp. The third communication from E. C. Genet is *On the use of milk to regenerate decayed Sheep, and for other purposes.*

The next article is Dr. Benjamin De Witt's *Letter on Chimney Fireplaces*, addressed to R. R. Livingston; which has already been for some time before the public, in the New-York Medical and Philosophical Journal and Review.

On the cultivation and manufacture of Woad. As the cultivation of the woad plant (the *isatis tinctoria*) will in all probability prove a profitable branch of husbandry, and be of material advantage in our woollen manufactories, the society, at the suggestion of W. W. Morris, Esq. have republished, from the Bath and West of England Agricultural Society papers, the essay on this subject from the pen of Mr. John Parish. Some judicious remarks are contained in the *Paper on the importance of regulating the inspection of Flour, &c. in the State of New-York,* by Jonas Humbert, and in the *Letter* from Professor Brownell, of Union College, on the subject of *Merino Sheep.*

Researches on the light manifested in the combustion of inflammable substances, by Count Rumford, F. R. S. and Foreign Associate of the National Institute; read at the sitting of the first class of the Institute, October 14, 1811. *Translated by James Low, M. D. and Secretary to the Society of Arts. Observations on the means of perfecting Lamps, with a Description of a new portable one, by Count Rumford, F. R. S. and Foreign Associate of the National Institute. Read at the sitting of the First Class of the Institute, June 24th,* 1811. *Translated from the French, and read before the Society for the Promotion of Useful Arts, March 25th,* 1812, *by T. Romeyn Beck, M. D. &c.*

Our limits do not allow us to enter into any analysis of the contents of these important papers. The volume closes with an *Appendix*, containing certain proceedings of the legislature of the state of New-York, and of the Society for the promotion of Useful Arts, for the encouragement of the manufacture of woollen cloth; a law organizing certain classes or committees in the society, &c., and an alphabetical list of its members.

ART. III. *A System of Anatomy for the use of Students of Medicine.* By CASPAR WISTAR, M. D. *Professor of Anatomy in the University of Pennsylvania.* Philadelphia. Dobson, 8vo. vol. 1. pp. 422. 1811. vol. 2. pp. 454. 1814.

The author to whom we are indebted for the present system of Anatomy has long occupied a station of eminent distinction in the medical world. As an accurate and sagacious observer, his abilities in the discharge of the more practical duties of his profession have given an established character to his opinions, while his merits as a public teacher have

acquired for him a reputation not to be enhanced by any encomium of ours.

This work is particularly intended for the use of the student of anatomy when the objects which it describes are before him. "Convinced," says the author, "that the structure of the human body cannot be properly understood without studying the real subject, I have not attempted to communicate an idea of it by description without demonstration; and as this is the nature of the work, there are no engraved plates in it." This design, as might have been anticipated, from the learning and talents of the author, has been ably and faithfully executed. The medical literature of the United States is enriched by the publication of these volumes.

ART. IV. A VIEW *of the* MERCURIAL PRACTICE *in* FEBRILE DISEASES. *By* JOHN WARREN, M. D. *President of the Massachusetts Medical Society, and Professor of Anatomy and Surgery in the University of Cambridge.* Boston. T. B. Wait & Co. 8vo. pp. 195. 1813.

MEDICINE, like the other branches of natural knowledge, may with propriety be considered an *experimental* science; and hence it is obvious, if we ever wish to attain to any thing like certainty in it, that the only principles upon which it can be properly established must be derived from well attested *facts*. The process of reasoning by induction, so beneficially experienced in prosecuting inquiries in the collateral branches of learning, will no doubt apply with equal success in medical investigation, and be as frequently followed by results no less salutary. It is therefore with peculiar pleasure we take up the present volume, knowing, as we do, that it is the performance of one who has long held a distin-

guished rank among the most eminent practitioners of this country, and who, amidst the fatigues of professional avocation, finds leisure sufficient to enable him to record for the benefit of others the important results of his own extensive experience.

Dr. Warren commences with a *prospective introduction*, in which are briefly stated the several subjects which he has attempted to discuss. The work itself is divided into four parts. The first opens with a general history of the mercurial practice, which is followed by observations on quicksilver and its medical preparations; on the operation of mercurials upon the body; on their action as stimulants; their operation on disease; on the changes which mercurials effect by their action in the system, and on salivation. Dr. W. seems to coincide in opinion with Mr. Hunter, that mercury creates a new action in the system, or what may be termed an artificial disease, by which the original disorder is either subdued or cured; that its operation is chiefly that of a powerful stimulant; and that this effect is produced from the oxygen with which the metal is combined; though he inclines to the belief that the activity of mercurials does not depend upon oxygen alone.

"Mr. Cruikshank, of Woolwich, in March, 1795, destroyed variolous virus by oxygenated mucilages.

"Without, however, supposing that oxygen has a specific power over the poison, in these cases its action may easily be accounted for, on the principle of a stimulant exciting the system to defend itself against it, or totally to expel it.

"It is a well known fact in pneumatic medicine, that oxygen, prescribed in small quantities, invigorates the constitution without exhausting the excitabilty.

"May we not, then, conclude it probable, that mercury may cure contagious fever by furnishing oxygen to the blood and the so-

lids by a sort of digestive power separating the oxygen, and, perhaps, expelling the metallic part of the oxyde from the surface of the body; and that the success with which it has been used in putrid fevers, in which the deficiency of oxygen is generally, I believe, acknowledged, is derived from its supply.

"Indeed, Dr. Darwin supposes that the sensorial power, which is in fact the same thing with excitability, is secreted in the brain from the oxygen in the blood. If so, the utility of the mercurial oxydes in supplying the mass with that material is obvious; and it needs not to be remarked, how much this circumstance must co-operate with the stimulant effect of the oxygen, in increasing the sum of excitement in the system." p. 26.

Dr. Warren is opposed to the at present fashionable and pernicious practice of inducing profuse salivation in the treatment of febrile and other diseases.

"It is a question of some consequence, whether it is necessary to salivate in order to cure fevers. As the natural effect of this process is to produce indirect debility, it seems to be generally agreed, that in most cases of fever, especially those of the less violent kind, salivation may with propriety be avoided. It is doubtful, however, whether mercury will generally produce its salutary effect in the habit, without stimulating to a degree that shall affect the mouth; but as the soreness of the gums and mouth is the only index of the degree to which the mercurial impregnation of the blood is carried, this mark is usually aimed at, as a proof that the object has been attained." p. 32.

The subjects embraced in part second are, a general description of epidemic fevers; the practice in epidemics with mercury; and observations on the general use of mercury in fevers combined with hepatic and other visceral affections. To his own excellent remarks on these several points, the author has added many others of a practical nature from the writings of Hume, Moseley, Wright, Chisholm, and Rush.

Part third is divided into two sections; on the practice with mercury in typhus, and on the yellow fever as it appeared in Boston. The author considers the various species of typhus which have been noticed by practitioners under the names of jail, hospital, and camp fever, as "totally different" in their nature from the yellow fever, as it appeared in Boston in 1798 and 1802; and in doing this, while he manifests the superiority of his own judgment, he affords, in our opinion, additional proofs (had further proofs been wanting) of the absurd reasonings of those who have so obstinately contended for the unity of diseases, and who, in their sectarian zeal, have confounded all the different kinds of fever, for the purpose of propping up a weak and pernicious theory.

Typhus, in the form of ship fever, was prevalent in the Alliance frigate, upon her arrival in Boston, in 1780: a large number of the sick were immediately sent to the hospital in that town.

"The symptoms," says Dr. Warren, "were entirely different from those of the yellow fever, which afterwards spread such alarm throughout this part of the United States; and the disease doubtless originated from human contagion, commencing on board, from the peculiar circumstances of that ship. In an attendance on a large number of these cases, scattered in various parts of the town, as well as contained in the crowded hospital, destitute of many of those accommodations which, under any other than the existing circumstances of the country might have been afforded, I had the misfortune to be attacked with the disease, and noted its progress with particular interest." p. 93.

Dr. Warren also describes, with considerable minuteness, a number of cases of a typhus with uncommonly malignant symptoms which made its appearance in Boston, in 1804 and 1805.

On the yellow fever of Boston much valuable information is communicated. Dr. Warren asserts that this disorder never made its appearance in that town as an epidemic prior to the year 1798. According to Dr. Warren, no evidence of the importation of the disease could be produced, nor was there an instance of its being communicated to those who removed out of the sphere of its supposed origination. We thus most cheerfully make known the sentiments of the author, though of their correctness, on these two points, we must be permitted to doubt: we wish that an equal degree of candour were manifested by some of our fellow editors under similar circumstances.

"The symptoms of this disease were much in the form of that described by Dr. Rush, which prevailed in Philadelphia, in 1793. The number of the sick has never been accurately estimated; but about one hundred and forty-five persons died. Most of those who were seized within the first two or three weeks died.

"The bodies of several of the deceased were examined, and the liver, lungs, and stomach, were found to have been highly inflamed, the veins being excessively turgid with black blood; and in one instance the thorax contained a large quantity of blood extravasated from the ruptured vessels of the lungs. After these dissections, several of the practitioners in the town, convinced of the congestion under which those organs laboured, adopted a much freer use of calomel than had heretofore been practised; and the success of the method appeared to justify the means. Candour requires us, however, to mention that the greater number of recoveries in the latter part of the season, was not to be imputed solely to this improved mode of treatment, but in a great measure to the mitigated form of the disease.

"Calomel was usually prescribed, after bleeding and a purge, in doses of two or three grains every two hours, till the mouth became sore; upon which the disease invariably gave way:—in many persons, however, this could not be accomplished. In some cases of salivation, dangerous hemorrhages ensued." p. 115—16.

The fourth part of this work is devoted to a consideration of the mercurial practice in small pox, measles, the throat distemper, cynanche trachealis, hydrocephalus internus, pneumonia and pleurisy, phthisis, dysentery, and rheumatism. No small degree of merit is due to the practitioners of America for their improvement in the treatment of small pox. The information concerning the sore throat distemper which prevailed in Boston in September, 1735, and since that time in several other districts of this country, but more particularly in the eastern states, will be read with satisfaction. We agree with Dr. Warren in his opinion relative to the inefficacy of mercury for the removal of croup: the violence of the symptoms of this disease, and the rapidity of its progress, "are too great to admit of any constitutional change by the operation of this medicine." Though calomel has, for a considerable time, been thought to be the principal if not the only remedy affording any prospect of success in hydrocephalus internus, yet from some recent cases of this alarming disease, which have fallen under our notice, we are disposed to doubt the truth of much that has been said in favour of the efficacy of this mercurial preparation in this complaint. On the subject of consumption the author offers some judicious practical remarks, from which we extract the following as among the most interesting.

"Dr. Rush has published a number of cases of pulmonary consumption treated by mercury.* In three cases salivation proved a complete cure. Dr. Pfeifer relates also a case of a person in a very advanced stage, cured by the same means. This method has been tried in many instances in this place. In one case, which originated from hæmoptysis, it was not successful. In several, where there was evidence of tubercles, and at

* Medical Repository.

length suppuration, it was used through all the stages of the disease, but without advantage.

"The following is the only instance in which I found it useful.

"1805, I visited a lady who for several weeks had laboured under a severe cough, with slight pain in her side. On examination, her pulse was found small and irregular, about 100 in a minute, with short and difficult respiration, stricture over the chest, night sweats, extreme debility, and most of the common symptoms of deep pulmonary affection. Expectoration of matter of a purulent appearance, constant diarrhœa, and extreme emaciation, designated the extreme hazard of the case. She was from home when these complaints first came on, and had taken no medicine till I visited her.

"As her countenance was of a yellowish cast, I gave, the first day, an emetic of ipecac. and an opiate at night. I then gave her the usual expectorant medicines; but for several days the symptoms increased rapidly, and I considered her case as almost desperate.

"Her diarrhœa and cough continuing, I ordered a pill of one grain of ipecac. and two of calomel to be given every twelve hours. On the third day, after having taken six pills, the mouth became to my astonishment suddenly sore, and on examination I found her breath strongly affected with a mercurial fœtor.*

"The pills were immediately discontinued. For several days the salivation continued to increase, the ulcerations in the mouth became extremely troublesome, the breath intolerably offensive, and the gums, tongue, and fauces so much swelled, as to occasion great distress, and almost to threaten suffocation. The most powerful doses of opium procured little rest at night.

"From this time her cough abated, the night sweats were less profuse, her pulse daily became slower, and, by the time the

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* This is one of those cases in which the necessity of great caution in the use of mercury, from the small quantity which will in some habits produce salivation, is exemplified.

salivation had subsided, which was not till the end of the fourth week, all her symptoms had completely disappeared. She has had no complaint of any kind since, has recovered her strength and flesh, and at this time is in perfect health.

"In this case, from the colour of the skin, there was much reason to suspect some hepatic affection; and the efficacy of the salivation, which was indeed entirely accidental, seems to afford some grounds for a conjecture, that the consumptive complaints were merely symptomatic.

"It is possible, that some disease existing in the liver, might, from its connection with the diaphragm, bring on the pain in the chest, and the difficulty of respiration; and from the increased irritability of the coats of the lungs, the quickness of the pulse may be accounted for.

"Whether any affection of this nature might have combined with the diseases cured by Drs. Rush and Pfeifer, is mere matter of conjecture. I have, however, no difficulty in concluding that, in complicated cases of this kind, mercury would be preferable to any other medicine in common use.

"In venereal consumption it may, if seasonably applied, with much certainty be relied upon for a cure.

"In the common tubercular phthisis, the powers of this medicine in promoting absorption might, possibly, be sometimes beneficial; but in the ulcerated state I should much doubt its utility.

"This stage of the disease is easily distinguishable from the other by the appearance of the expectorated matter, according to the established tests for identifying pus, and the uniformity of the symptoms after suppuration has taken place.*

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* An opinion has been entertained that a species of consumption, denominated mucous, is of the same nature with gonorrhœa, owing to an irritation on the mucous glands of the lungs, which prevents their due preparation of the mucus: hence the form of this disease, which is so easily cured by mercury, is inferred to be of this description. Richter's Medical Observations, 1794, p 272.

"So far as the action of mercury may be considered as dependent on its oxygen, it might be suspected to be injurious in phthisis, by adding more of that article to the already super-oxygenated mass. If it is a fact, that the mass of blood in consumption is in this predicament, the objection must have weight.

"It would seem, however unaccountable, that this should be the case under a state of the lungs in which a part of their vessels must be impervious. It would be natural to suppose, that less oxygen would be absorbed, and the whole system would rather suffer from a deficiency, just as in cases of pregnancy, wherein one pair of lungs is sometimes insufficient to oxygenate the whole mass for both mother and fœtus, and abortion is the consequence." p. 168—171.

The introduction of mercury in the treatment of pulmonary diseases, after allaying inflammatory action by venesection and other evacuants, may be deemed one of the most important innovations in modern practice. In directing the attention of practitioners to the use of this remedy in a disease which, upon a moderate computation, may be supposed to augment the whole number of deaths in the United States at least one sixth, Dr. Rush deserves the tribute of gratitude. We shall only add, that our own success in several recent cases has tended very materially to strengthen our opinion in favour of mercury in the treatment of phthisis, after the removal of the symptoms which more particularly characterize its inflammatory stage.

But without further remarks on President Warren's work, we recommend it to the careful perusal of practitioners, confident that it will amply repay them for their labour by the communication of many important practical facts.

ART. V. A GAZETTEER *of the* STATE OF NEW-YORK; *carefully written from original and authentic materials; arranged upon a new plan. In three parts: comprising, first, A comprehensive geographical and statistical view of the state, conveniently disposed under separate heads: Second, An ample general view of each county, in alphabetical order, with topographical and statistical tables, showing the civil and political divisions, population, post offices, &c.: Third, A very full and minute topographical description of each town or township, city, borough, village, &c. &c. in the whole state, alphabetically arranged; as also its lakes, rivers, creeks, with every other subject of topographical detail: forming a complete gazetteer or geographical Dictionary of the State of New-York; with an accurate map of the State. By* HORATIO GATES SPAFFORD A. M. *author of a Geography of the United States, member of the New-York Historical Society, and corresponding secretary of the Society of Arts.* Albany. H. C. Southwick. 8vo. pp. 336. 1813.

THE above ample title page so fully makes known the nature and objects of the present work, that it is deemed superfluous to enter into any detail of its contents. The general approbation which it has received from many competent judges, and the rapid sale it has already met with, are sufficient evidence of the merit of the design, and of the ability with which it has been executed. Much is due to the author for the great labour he has undergone in order to procure original and satisfactory materials for his pages, and equal praise for the extent and general accuracy of the information they impart. By the publication of the Gazet-

teer of the State of New-York, Mr. Spafford has set an example which it is hoped will ere long be followed in every state throughout the Union.

ART. VI. COLLECTIONS *for an Essay towards a* MATERIA MEDICA *of the* UNITED STATES. *By* BENJAMIN SMITH BARTON, M. D. *Professor of Materia Medica, Natural History, and Botany, in the University of Pennsylvania.* Philadelphia. Earle & Co. 8vo. pp. 152. 1810.

This, as the reader is informed, is the third edition of these *Collections* towards a materia medica of the United States. Although want of leisure and an imperfect state of health have prevented the author from making those additions to the work of which it is susceptible, and for which he asserts he possesses ample materials, yet he could not consent to reprint it precisely in the same state in which it had already appeared before the public. Though the additional improvements which this volume has received be far from considerable, and some time has elapsed since its publication, yet as this is the only work professedly on the subject of which it treats that has issued from the American press, it is hoped that a brief notice of it will not prove unacceptable.

Professor Barton, in common with other writers, considers the materia medica as naturally divisible into two parts: that which relates to the aliments, or *nutrientia* of mankind, and the *materia medica* more properly so called. In this second division he has disposed of the facts and opinions which he has collected relative to the materia medica of the United States, so far as concerns the vegetable kingdom, under the nine following heads: viz. 1. Astringents. 2. Tonics. 3. Sti-

mulants. 4. Errhines. 5. Sialagoga, or salivating medicines. 6. Emetics. 7. Cathartics. 8. Diuretics. 9. Anthelmintics.

The vegetable productions noticed under the first subdivision, *astringents*, are the geranium maculatum, heuchera americana, actæa racemosa, uva ursi, liquidamber asplenifolium, pyrola umbellata, myrica cerifera, prinos verticillatus, and the orobanche virginiana. Among the *tonics*, Dr. Barton has enumerated a number of valuable indigenous articles of powerful medicinal virtues, and which he considers might be used with advantage as substitutes for the Peruvian bark. The bark of the liriodendron tulipifera (the tulip tree) has frequently been used with success in intermittents: the same may be said of the bark of the populus tremula, or aspin; and of the cornus florida and cornus sericea, (dogwood.) The excellent experimental dissertation of Dr. Walker is properly referred to for much information concerning these two species of cornel. On this part of Dr. Barton's subject, some interesting particulars are communicated relative to the tonic properties of the aristolochia serpentaria, the eupatorium perfoliatum, the zanthoriza apiifolia (the z. tinctoria of Woodhouse) and the hydrastis canadensis, commonly called the yellow root, which grows in various parts of the United States, particularly in rich soils adjacent to the Ohio, and in the western parts of Pennsylvania, Virginia, and Kentucky. In the section denominated *stimulants* the author has, among others, taken notice of the populus balsamifera, the andromeda, and azalea, the laurus sassafras, the arum triphillum, the kalmia latifolia, the phytolacca decandra, (the poke) and the rhus radicans. The most powerful excitant which Dr. Barton has enumerated in the list of *sialagogues* is the zanthoxylum clava herculis, vulgarly known by the name of the toothach tree.

The euphorbia ipecacuanha, spiræa trifolia, and the sanguinarea canadensis, are among the indigenous vegetables of this country most entitled to attention as *emetics*.

"The first of these, the euphorbia ipecacuanha, like all the species of the genus, is an extremely active plant.* It is employed as an emetic by some of the country people. I do not know the dose. I suppose it is small, for it belongs to the head of drastic emetics. I am not certain that it would be a valuable addition to the materia medica; but perhaps it would. There are many cases in which we have occasion to make use of immediate and active emetics; as when certain poisons, such as laudanum, &c. have been swallowed. In such cases it may, possibly, be of much use.

"I can speak with more confidence of the spiræa trifoliata. This is a shrub which grows very plentifully in various parts of the United States. It is one of the few active plants of the class *Icosandria*, to which it belongs.† The root, which is the part made use of, like that of the officinal ipecacuanha, consists of a cortex or bark, and a ligneous or woody part. The active power of the root seems to reside exclusively in the bark. It is a safe and efficacious emetic, in doses of about thirty grains. Along with its emetic, it seems to possess a tonic power. It has, accordingly, been thought peculiarly beneficial in the intermittent fever; and it is often given to horses to mend their appetite. This plant has a number of different names, such as Ipecacuanha, Indian-Physic, Bowman's root," &c. p. 26—7.

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* This species of Euphorbia, or Spurge, grows spontaneously in various parts of the United States. In the state of Jersey, within a few miles of Philadelphia, it is pretty common, growing in the dry and sandy soil. It flowers early in the spring. It is the root which is employed.

† Linnæus thought it very remarkable, that a plant belonging, as this does, to the order of *Senticosæ*, should possess such active powers. "*Spiræam trifoliatam* Ipecacuanam vocant & vomitum facere dicunt, quod sane singulare esset in hoc ordine;" viz. *Senticosæ*. Caroli a Linne, M. D. *Prælectiones in Ordines Naturales Plantarum*. Edidit P. D. Giseke. p. 449. Hamburgi; 1792. But it might be shown, that other plants of the same natural order are considerably active. Not to mention others, it will be sufficient to observe, in this place, that the Spiræa Opuli folia, well known in the United States, by the name of Nine-Bark, is by no means an inert vegetable.

Of the *cathartics*, the milder kind include the triosteum perfoliatum, sometimes termed bastard ipecacuanha; the asclepias decumbens; the mechameck, or wild rhubarb of some of our indians, which Dr. Barton considers the convolvulus panduratus, and is known in Virginia by the name of the wild potato. Among the more active purgatives is the podophyllum peltatum, a common plant through the whole of the United States: it is called by a variety of names, such as may-apple, mandrake, ipecacuanha, wild lemons, &c. The root is the part used in practice. "In doses of seventy grains, it is an excellent cathartic. It has some advantages over the rhubarb and jalap. It is most advantageously used in combination with calomel, or the crystals of tartar." According to Dr. Barton, the United States furnish several native plants possessed of active *diuretic* qualities, which deserve the attention of our physicians; such as the seneka snake root, the lobelia syphilitica, the serratula spicata, and the cassena.

"The Cassena is a species of Ilex, or Holly. It is the Ilex vomitoria of Aiton, and is a native of Carolina, West-Florida, &c. It has been called South-Sea tea, or Evergreen-Cassine. It is thought to be one of the most powerful diuretics hitherto discovered. It is held in great estimation among the southern Indians. They toast the leaves, and make a decoction of them. It is the men alone that are permitted to drink this decoction, which is called "Black Drink." p. 38.

To the preceding notice of the cassena, Dr. Barton has added some interesting information from Lawson's New Voyage to Carolina.

Of the remedies generally arranged under the name *anthelmintics* we have many: the most celebrated of them is the Carolina pink root, now so generally known and deservedly

valued. The others mentioned in the present work are, the chenopodium anthelminticum, helleborus fœtidus, lobelia cardinalis, silene virginica, polypodium vulgare, veratrum luteum, &c.

In his second part Dr. Barton has a section under the term *antilithics*. "By this term, says he, I mean those medicines which give relief in the disease of lithiasis, or calculus, and also in nephritis, when this depends upon the same causes that induce calculus." This name he prefers to that of lithontriptics. The uva ursi, and the pyrola umbellata, seem to be the most important of the native vegetables calculated to be of service in affections where antilithics are indicated.

We have thus attempted to give some idea of the contents of these Collections; and must refer the reader for fuller and more satisfactory information to the volume itself. As a naturalist the merits of Dr. Barton are of no common kind; and he has deservedly received a large share of praise in his own and in foreign countries for his many and successful exertions in enlarging the sphere of natural knowledge. The design of the present work is in the highest degree commendable. From the importance of the subject on which it treats we could have wished that the language of Dr. Barton had been more precise, and for a practical work in medicine, that the facts which it contains had been more amply and more succinctly related.

ART. VII. AN ACCOUNT *of the* NEW-YORK HOSPITAL. New-York. Collins & Co. 8vo. pp. 65. 1811.

THE New-York Hospital, both with regard to the liberality of its foundation and the extent of its charity, may be pro-

nounced the most important institution of the kind established in this country: as a valuable auxiliary to the medical school of this city its benefits have been long felt and duly appreciated. In the present well-written pamphlet many interesting particulars are detailed concerning the first organization of the establishment and its present condition, together with its charter, by-laws, officers, &c. We make the following extracts for the purpose of diffusing more generally the information they contain.

"In the year 1770, a number of the most respectable and public spirited inhabitants of the city of New-York, subscribed considerable sums of money, for the purpose of erecting and establishing a public Hospital; and a petition was presented by PETER MIDDLETON, JOHN JONES, and SAMUEL BARD,* three eminent physicians, to *Lieutenant Governor* COLDEN, then commander in chief of the province of New-York, for a charter of incorporation, which was, in consequence, granted, the following year, by the Earl of DUNMORE, governor and commander in chief of the province.

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* From the following extract from a medical discourse, delivered by Dr. *Middleton*, in King's (now *Columbia*) College, on the 3d November, 1769, it appears that the first suggestion relating to the establishment of an Hospital was made by Dr. *Bard*. "The necessity and usefulness," says Dr. Middleton, "of a public infirma-"ry, has been so warmly and pathetically set forth, in a discourse delivered by "Dr. *Samuel Bard*, at the commencement in May last, that his excellency Sir "*Henry Moore* immediately set on foot a subscription for that purpose, to which "himself and most of the gentlemen present liberally contributed. His Excellen-"cy also recommended it, in the most pressing manner, to the assembly of the pro-"vince, as an object worthy of their attention; and the corporation of the city "have given assurances of granting a very valuable and commodious lot of ground "for erecting the building upon; so that there is now almost a certain prospect of "this benevolent and humane foundation soon taking place; and as it is to be on the "most catholic and unexceptionable plan, it is to be hoped, that it will meet with "the countenance and encouragement of every compassionate and good member "of society, whatever party or denomination he may choose to be distinguished "by, on other occasions."

"By this charter, dated the 13th July, 1776, the mayor, recorder, aldermen, and assistants, of the city of New-York, the rector of Trinity Church, the different ministers of the several other protestant churches, the president of King's (now Columbia) College, and the principal and most respectable inhabitants of the city, were named as members, and incorporated by the name of the "Society of the Hospital in the city of New-York, in America."* Twenty-six governors were also named, for the management of the affairs and business of the institution, who held their first meeting on the 25th July, 1771.

"Through the influence of Doctor *John Fothergill* and Sir *William Duncan*, considerable contributions were made to the society, by many inhabitants of the city of London, and other places in Great-Britain; and, in 1772, the legislature of the province of New-York granted an annual allowance of 800 pounds (2,000 dollars) in aid of the institution, for twenty years.

"In 1773, the governors of the hospital purchased of Mrs. *Barclay* and Mr. *Rutgers*, ground for the erection of a suitable edifice. A plan of a building having been procured by Dr. *Jones*, the foundation was laid the 27th July, 1773; but on the 28th February, 1775, when it was almost completed, the building accidentally took fire, and was nearly consumed.

"By this misfortune the society suffered a loss of seven thousand pounds; and the execution of their benevolent plan would have been wholly suspended, had not the legislature, in March, 1775, generously granted them the sum of four thousand pounds, towards rebuilding the house, and repairing the loss they had sustained. But the war between Great-Britain and the colonies, which took place in the same year, prevented the completion of the edifice. During the war, the house was occupied by the *British* and *Hessian* soldiers, as *barracks*, and occasionally, as an hospital.

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* By an act of the legislature, passed March 9th, 1810, the name of the corporation has been changed to that of "*The Society of the New-York Hospital.*"

"The effects of the war on the circumstances of our citizens, and the general derangement of affairs, prevented any attention to the institution; and it was not until the 3d January, 1791, that the house was in a proper condition to receive patients, when eighteen were admitted.

"The annuity granted by the provincial legislature ceased with the commencement of hostilities between Great-Britain and the colonies; but the legislature of the state, on the 1st March, 1788, directed eight hundred pounds, during four years, from the 1st February, 1788, to be paid to the hospital, out of the moneys arising from the *excise* in the city of *New-York*. And the legislature, by a subsequent act, passed the 11th April, 1792, for the better support of the hospital, granted two thousand pounds a year, for five years, payable out of the city excise.

"By an act passed the 31st March, 1795, the legislature repealed the act of the 11th April, 1792, as to future payments, and granted to the hospital four thousand pounds, annually, for five years, payable out of the duties on sales at public auction, in the city of New-York. An additional sum of one thousand pounds a year, for four years, was granted 11th April, 1796, payable out of the same fund. And on the 20th March, 1801, the annual allowance of 12,500 dollars was continued for five years, from 1st February, 1800.

"By an act passed the 30th March, 1797, for the establishment and support of a *Lazaretto*, the masters and wardens of the port of New-York were authorized to receive of the masters, officers, seamen, and passengers of every vessel entering the port of New-York, a certain sum for each person, which was directed to be paid to the commissioners of the health office, for the relief of sick seamen and foreigners admitted into the *Lazaretto;* and the surplus, if any, was directed to be paid to the governors of the hospital, for the relief of such seamen and foreigners as might be patients of the Hospital.

"By an act passed April 1, 1796, for regulating the port of New-York, the harbour-master was directed to pay certain fines therein mentioned to the treasurer of the New-York Hospital.

"By an arrangement between the treasury department of the United States and the hospital, made in 1799, the sick and disabled seamen at the port of New-York are received into the hospital, and enjoy all its advantages. The collector of the port, under the direction of the secretary of the treasury of the United States, pays, out of the hospital money collected and received by him, *three dollars* per week, for the board and maintenance of each seaman, including medicine and other charges.

"But the collector, since July, 1804, has refused to pay for more than 75 seamen, at any one time. The governors, however, considering every seaman who has paid hospital-money to the collector of the United States, as having a just claim on the government of the United States for hospital relief, have not hitherto refused admittance to seamen, beyond the number limited; trusting the justice of the national legislature, for remuneration of the sums expended, in the support of such seamen, beyond the amount received from the collector.* Without the aid which has thus been afforded to them, many of this useful and meritorious, though careless and improvident class of men, must have been abandoned, in disease and poverty, to the casual and precarious relief of common charity.

"In 1801, an agreement was made between the New-York Hospital and the governors of the Lying-in-Hospital, by which the existing funds of the latter were to be paid to the use of the former institution, on condition that a lying in ward should be established: and a suitable ward for that purpose was accordingly fitted up and opened for the reception of patients.

"In consequence of the recommendation of the medical faculty of Columbia College, the governors of the hospital, in August, 1796, appropriated the sum of 500 dollars towards the purchase

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* The number of seamen who received the benefits of this institution, during the years 1806, 1807, 1808, 1809, and 1810, beyond the number limited by the collector, was 843. And the whole charge of their maintenance, at the rate of three dollars per week, during those five years, amounts to 9,500 dollars; for which sum nothing has yet been received by the hospital.

of a medical library; to which the members of that faculty contributed books from their private libraries, and part of their fees of public instruction. An hospital library was thus established, which was further augmented by the purchase of the medical library of Dr. *Romayne*, in 1800, and by the accession, in 1805, of a library of a private association of physicians, under the name of the Medical Society of New-York who gave their books on condition, that they and such of their sons, as should become practitioners of medicine in the city of New-York, should have free use of the hospital library. In 1805, the governors appropriated the sum of 250 dollars, for the purchase of books; and large additions have been made to it, by purchases and donations, from time to time: so that, including the valuable botanical library of Dr. *Hosack*, lately purchased, the hospital library now contains about 3,000 volumes, among which are some of the rarest and most valuable works in medical science.

"As there existed no institution in the state, for the reception and cure of lunatics, the governors were induced to appropriate apartments in the hospital for patients of that description; but as the building was not designed for that purpose, the accommodations were found to be extremely inconvenient and inadequate; and the applications for the admission of lunatics constantly increasing, it was resolved, in 1806, if the legislature would lend its aid for that purpose, by further contribution, or by giving greater permanence to the existing allowance, to erect a separate building, to be exclusively appropriated to the reception of that unfortunate class of persons.

"An application was accordingly made to the legislature, who passed an act, on the 14th March, 1806, continuing the annual provision for the hospital, payable out of the duties on sales at auction, in the city of New-York, until the year 1857. The governors immediately proceeded to lay the foundation of the proposed edifice, denominated the "Lunatic Asylum," which was completed, so as to be open for the reception of patients, on the 15th July, 1808, when nineteen were removed from the other building

and forty-eight more admitted, making in the whole sixty-seven. The whole cost of the asylum was about fifty-six thousand dollars.

"To complete the plan of the hospital, and render it more extensively useful, it is desirable that another building should be erected, on the northerly side of the ground, corresponding with the lunatic asylum, which, besides accommodating a greater number of patients, would furnish apartments for an anatomical museum, a more spacious theatre for surgical operations, and apartments for other useful objects, connected with the institution; but the execution of this design will depend on the increase of the funds of the hospital, which have been exhausted by the building of the asylum, and in necessary repairs and improvements. The governors, however, indulge the hope, that by the aid of the legislature, and private contributions, this part of their plan may yet be accomplished.

"To assist the governors to discharge the debts contracted in building the asylum, the legislature, by an act passed the 23d March, 1810, granted to the hospital the sum of 3,500 dollars per annum, for ten years, payable quarterly out of the duties on goods sold at auction in the city of New-York." p. 3—7.

"The whole number of patients admitted into the hospital from the year 1792, to 1810, inclusive, is 13,753; of these 9,227 have been cured; 886 relieved; 646 discharged, at the request of friends; 458 as disorderly; 187 sent to the alms-house; 517 eloped, and 1676 have died—266 patients remained in the hospital, at the end of the year 1810.

"From the 1st February, 1792, to 31st January, 1795, a period of three years, 1221 patients were admitted, and 1169 discharged. From the 31st January, 1795, to 31st December, 1803, a period of 9 years, 4,760 were admitted, and 4,744 discharged. From 31st December, 1803, to 31st December, 1810, a period of 7 years, 7,772 were admitted." p. 13.

ART. VIII. AMERICAN ORNITHOLOGY; *or the Natural History of the Birds of the United States: illustrated with plates, engraved and coloured from original drawings taken from Nature.* By ALEXANDER WILSON. Philadelphia. Inskeep & Bradford. Imperial 4to. vols. 5th, 6th, 7th, 8th, and 9th. About 120 pages each: 1812—14.

THE author of the American Ornithology having closed his earthly career before he finished that important work, the task of completing the 9th and last volume devolved upon his friend and executor Mr. George Ord, who has prefixed to it an interesting biography of Mr. Wilson. Having on former occasions noticed several of the volumes, it now remains for us to pay the last tribute of respect to a man whom we esteem, and to an author whose works will always occupy an important rank among the writings on Natural History.

The life of Mr. Wilson exhibits the complete triumph of genius over the want of education, and of persevering industry over the evils of poverty. Without any other reliance than on his own faculties, and with a force of exertion which nothing could check or retard, he has obtained a celebrity in science to which few men in this country can aspire, although many may be more highly favoured with the endowments of genius, and more extensively gifted with the advantages of early education and the bounties of fortune. The life of Wilson shows, conclusively, that the temple of fame is open to the most humble individual in the community, if he only attempts it with zeal and industry, and with a judicious selection of the part which he intends to act on the

theatre of the world: and it may not be amiss to add, in opposition to the complaints of his biographer, that notwithstanding he experienced, in some few instances, the slights of ignorance and the sneers of fastidious and factitious impertinence, yet that a liberal and enlightened community bore witness to his merits by a munificent subscription, which, after satisfying all expenses, would have placed him, if living, on the enviable ground of independence.

The science of Ornithology is involved in considerable difficulty and confusion. The arrangement of animals according to the principles of the Linnæan system, is an admirable contrivance to extricate the science of zoölogy from the darkness which surrounded it. The classes and orders of the great naturalist are arbitrary: the genera and species are natural; but when we consider that the general characters of birds are taken from the bill, tongue, nostrils, cere, caruncles, and other naked parts—and that the characters of the species are derived principally from the plumage and habitudes, we must be sensible that here is a wide field for a difference of opinion. Besides, the nomenclature adopted, in endeavouring to compress the descriptions of animals within the shortest compass, is frequently a mystery to most readers. Take, for instance, an account of a bird by Linnæus, Latham, or Pennant, and it will require considerable industry to penetrate the exact meaning of the author. The generic characters frequently run so closely into each other, that it is no easy task to make the appropriate arrangement. The plumage of birds varies according to seasons, to age, and to climate, and their manners assume a different appearance at different times and in different countries. The sexes exhibit almost invariably a diversity. The male is frequently smaller than the female, and is generally arrayed in a more beautiful dress. Genera are con-

founded together; varieties are represented as distinct species; the male is placed in a different species from his mate, and the same bird, at different ages and seasons, is considered a different species. The names of birds vary in different places.

In the same district of country the same bird frequently goes by different appellations, and the scientific name is also not uniform; Linnæus, Brisson, and Buffon, oftentimes disagree. We may add to this, the absurd custom adopted in this country of naming our birds after those in Europe, to which they are supposed to have some likeness, although in most respects they are dissimilar.

There are three modes in which we may obtain a knowledge of birds.—From personal observation of these animals in their natural state—from preserved subjects in cabinets of natural history—and from books. The first is undoubtedly preferable so far as it goes; but it is necessarily limited by our range of travelling. The second supplies this defect, but it is liable to this great objection; the subjects are often not only imperfectly prepared in the first instance, but generally decay and dissolve. In Cayenne, which has furnished more subjects for the cabinets of European naturalists than any other country, the birds are steeped in spirits for a long time, and dried by the heat of an oven. This must undoubtedly, in many instances, sully the glossy beauty of their plumage, and give them an appearance different from their natural one. Books must be resorted to in order to complete and extend our knowledge; but to place our sole reliance on them would be as absurd as to attempt to attain a knowledge of mankind by the meditations of contemplative retirement.

Our author has, with unparalleled industry and singular sagacity of observation, surmounted all the disadvantages which we have enumerated, and availed himself of all the sources of

information: every state in the union has witnessed his labours: on our Alpine hills—in our most distant forests—on the borders of our rivers and lakes—on the shores of the Atlantic, the footsteps of his enterprising industry may be seen. He first examined the feathered creation with his own eyes—he traced them in their most secluded haunts—he watched their migrations—he observed their seasons of song, and of love, and of incubation—he noticed their food, their instinct, and their habits.

After having explored this source of information, he next had recourse to cabinets of natural history, to the aviaries of amateurs, and to the observations of inquisitive and ingenious men. The museum of Peale furnished him with various and extensive knowledge; the methodical and comprehensive writings of Linnæus; the extensive information of Pennant, Brisson, Edwards, and Latham, and the splendid elucidations of Buffon, were also familiar to him.

Thus furnished with information, he has produced a work which excels all that precedes it, whether we have reference to the style and matter, or the drawings. It is in vain to attempt to form ideas from written descriptions of animals, sufficiently distinct, so as to distinguish them in all cases from each other: we must have recourse to the delineations of the pencil, and to the preservations of the museum. The number of species of birds has undoubtedly been greatly multiplied from the generality and confusion of descriptions: let the same bird be described after the Linnæan manner by two different persons, and it is an equal chance if they do not vary in some essential respects; but a faithful representation of the pencil will at once remove all ambiguity. The delineations of Wilson are done in such a masterly style that the bird is at once recognized. He also excels in his account of the manners of birds, and although he cannot boast

of the splendid eloquence of Buffon, yet there is such a fascination in his style, such a simplicity in his manner, and so much truth and nature in all his remarks, that we are compelled to give him the preference.

To form a just estimate of the extensiveness of this work, we have only to compare it with the celebrated natural history of Mark Catesby, published in 1754. Although the drawings of this writer are eminently beautiful, and generally correct, yet they are greatly inferior to those of Wilson. His descriptions also will not bear a comparison either in interest or extent: the whole number of birds which he describes amounts to 113, which contained all the land birds he saw in North America, between the 30th and 45th degrees of latitude. Wilson has figured and described 278 species, 56 of which were not known before: his untimely death has prevented the full execution of his plan. The swan, the turkey, and the crane, the most interesting of the feathered race, did not come under his review, a loss that cannot be supplied. With what interest would we read his remarks on the turkey? what light would he not have cast upon those controverted questions, whether the turkey is of exclusive American origin? and whether the domestic is a distinct species from the wild turkey? and whether, contrary to the general operation of cultivation and domestication upon animals and plants, this bird has dwindled in size, and sustained a deterioration by its domestic state?

Although Wilson has done much, yet much more remains to be done, in order to complete our ornithology. The whole number of species, according to Latham, is 3,000. Considering that the American republic, including our Louisiana acquisition, extends from the Atlantic to the Pacific; embraces the greatest and most spacious inland seas in the world, comprehends every variety of climate and soil, innu-

merable and boundless forests—prairies, or natural meadows, of several days' journey—deserts like those of Africa—mountains dividing the country into an eastern and western section—and rivers equalled in size by none in the old world: considering also its vicinity to numerous islands of a warm temperature, and the approximation of America to Europe and Asia, by which the land birds of the old world can have easy access to our continent; it is not unreasonable to suppose, that we may claim at least 1,000 species of birds, who either reside among us, or occasionally visit us. If this calculation be correct, what an extensive field yet remains for the ornithologist; and if another Wilson shall arise, endowed with genius and invincible industry, the rich treasures of natural science, which are now hidden from our view, will be drawn from the darkness which covers them, and exposed to the full view of an admiring world.

ART. IX. AN *Inaugural Dissertation on the* PATHOLOGY *of the* HUMAN FLUIDS. *Submitted to the public examination of the Trustees of the College of Physicians and Surgeons of the University of the State of New-York, Samuel Bard, M. D. President; for the degree of Doctor of Medicine, on the 4th of May,* 1813. *By* JACOB DYCKMAN, A. B. *Member of the Medical and Surgical Society of the University of the State of New-York.* New-York. Van Winkle & Wiley. 8vo. pp. 238. 1814.

FROM the author's preface it appears, that the present Dissertation was originally submitted, in manuscript, to the examination of the Trustees of the College of Physicians and Surgeons, in May 1813, for the purpose of receiving the honours of the medical doctorate in the University of New-

York. Believing the doctrines which he attempted to maintain to be founded on well-known physiological and pathological principles, and eminently calculated to advance the practical interests of the profession, he was afterwards induced to review his collegiate exercise, and to enter more fully into a defence of the tenets he had espoused. The present volume, therefore, though strictly speaking an inaugural exercise for a degree in medicine, may be considered as embracing opinions, the result of more mature deliberation than is usually found in performances of this kind. We have before remarked, that the statutes of the universities of this country did not exact from the graduate the publication of a Dissertation, and with deep regret do we state, that this system of discipline still exists. It nevertheless reflects much credit on the medical school of this state, that so large a number of their pupils voluntarily offer to the public, in a printed form, the evidence of their proficiency in medical science. If ever the universities of New-York, Philadelphia, Massachusetts, and Baltimore, are to attain to the reputation enjoyed by the institutions of a like nature in Edinburgh and Paris, it is incumbent on those who preside over the interests of our American seminaries, to enjoin regulations similar to those adopted with such success by the establishments in Europe. What is now a voluntary act on the part of students, ought to be made a prescribed and peremptory duty, and the publication of an inaugural dissertation, either in the Latin or English language, should, in every case, be an indispensable duty to be performed by candidates, previous to their being vested with medical honours. Among the improved regulations which it is hoped and believed will arise from the union of the medical schools of this state, there is none of more importance than the one now recommended. Let no exertion be spared to render that

profession learned and respectable, which, of all others, operates most extensively and most powerfully upon the interests of the community.

In the introduction to the present performance, Dr. Dyckman takes a cursory view of some of the principal theories which have prevailed among the ancients and the moderns concerning the pathology of diseases. The knowledge which the ancient physicians possessed of the nature of morbid affections was, in many instances, extremely limited, and frequently grossly erroneous: and notwithstanding the many advantages which the moderns possess, they are still greatly in the dark with regard to many of the most important phenomena accompanying disease. The two theories which have most extensively prevailed, are those embraced by the *humorists* and the *solidists*. The doctrines of the former were almost universally received, until the writings of Willis and Baglivi suggested the hint, that a consideration of the different conditions of the living solids would, in general, afford the most rational and satisfactory explanation of the various derangements of the system. To Hoffman, however, belongs the credit of having reduced this doctrine to any tolerably clear and simple form, and of pointing out its extensive application. The theories of Cullen, Brown, and Darwin, are properly considered by Dr. Dyckman as modifications of the doctrines of this justly celebrated systematic. The same, we think, may be said of the hypotheses of the late Dr. Rush.

In the opinion of Dr. Dyckman, the two opposite doctrines, that of the fluids and that of the solids, have both been carried too far by their respective advocates.

"While one party have supported one opinion, and the other the very reverse, the probability is, that no disease of the constitution can take place without involving every part of our sys-

tem, affecting the condition of the solids as well as that of the fluids. For such is the universal sympathy, and such the continual intercourse incessantly kept up between these component parts of our body, that in health they mutually assist and support each other, and are fitted by the laws of nature for the different purposes of the animal economy; in like manner, in the morbid state, they sympathize together, and reciprocally communicate their affections." p. 23—4.

The author justly considers the human body as an entire whole, whose various parts, though designed for many and different purposes, are yet subservient to each other, and in a perpetual state of action and re-action. Hence the truth of what has been so beautifully observed by Hippocrates. "Every thing in the human body," says this prince of medical philosophers, "is so disposed in manner of a circle, that you will find the end where you would look for the beginning, and the beginning where one might expect the end."

As all the animal motions are the result of the joint influence and coöperation of the different solids and fluids of the body, it is to the changes or disordered condition of either the one or the other, or both these, that we are to look for the cause of disease. The various affections of the living and inert solids, it is true, argues the author, will be found to be the cause of disease much more frequently than the various changes of the several animal fluids; but this, surely, he adds, is no good reason for rejecting altogether the agency of the latter, or for denying the possibility of a fault in the humours, or that they are capable of affecting, by their different condition, the motions or state of the living or inert solids. The blood may be considered the primitive principle of all animal substances, the common origin of all the animal solids and fluids: hence, when it is properly constituted, it is the source of health, and, on the

contrary, when it is vitiated, the cause of numerous morbid effects.

"That the blood," observes Dr. Dyckman, "and other humours of the body, are capable of admitting morbid or preternatural qualities, is a fact demonstrated by daily experience, and the uniform observations of physicians of every age and country. The colour, texture, consistence, and other sensible qualities of the blood, are liable to various alterations. Sometimes the humours appear to undergo decomposition in the body, as in *vitro*. In the scurvy, in putrid, malignant, pestilential fevers, &c. we observe all the phenomena of a degeneration and complete disunion of the different principles that compose the blood, the texture of which in some instances appears to be nearly destroyed. In such cases it seems as if the vital principle abandoned the government of the corporeal frame, and left the solids and fluids to the destructive action of external agents; in consequence of which they tend to putrefaction, and become decomposed, as they usually do when separated from the body, or when the principle of life or animality is extinguished. To ascertain these several morbid affections of the blood, with their various causes, signs, and effects, is the object of the following Dissertation. But in conformity with the generally received axiom, *Rectum est sui et obliqui*, before entering upon the consideration of the pathology or morbid state of this fluid, it will be necessary to offer a few observations on its natural history, and its appearance when in a sound condition; by comparing with which its qualities and accidents when diseased, it will not be difficult to refer the several vitiations to their proper heads or classes." p. 32—4.

Dr. Dyckman has arranged the subject matter of this volume under two general divisions; the first of which embraces the *morbid qualities of the fluids*. These may be comprised under three heads; *morbid fluidity*, *acrimony*, and *putrescency*. Previously, however, to entering upon the

consideration of these several subjects, he has thought proper to offer some observations on the natural history of the blood, as taken from sound persons. But we pass over this part of the exercise with remarking, that on this highly interesting physiological topic the author has evinced a large space of reading and minute observation, and that it affords the most satisfactory evidence of his extensive research into the writings of the ancients as well as the most recent authors; a circumstance, indeed, which is manifest in almost every page of his performance.

The author considers the morbid fluidity of the blood as arising from two causes, either from an excess, or defect of fluidity: the former vitiation he denominates *tenuity* and *resolution*, the latter *spissitude* and *viscidity*. The author devotes no less than thirty-six pages to an examination of the various causes which produce these different states of the fluids, and to a description of the various symptoms which denote their presence in the animal economy. In his investigation of this important subject, Dr. Dyckman has rendered the whole in an eminent degree subservient to the practical principles of medicine, and it were no difficult matter to select many parts as a proof of the justness of the opinion we have just pronounced of the merits of the work.

We are led in our progress to the section on the *morbid acrimonies of the blood*. It furnishes an elaborate and excellent view of the many causes which tend to produce an acrid condition of the vital fluid, and clearly and ably describes the pathological phenomena, originating from this source. Dr. Dyckman, adopting the opinion of the late Dr. M'Bride, considers the term *acrimony* as including all those noxious and morbific matters, which, being mixed with the blood, either destroy its healthy crasis, stimulate the living solids, or corrode the inert. Pathologists have gene-

rally divided acrids into *mechanical* and *chemical:* the author has confined his attention particularly to the latter. It was a remark of Gaubius, that these alone may so infect the fluids as to constitute a part of them.

"The sources of a morbid acrimony," says Dr. Dyckman, "are either *internal*, and derived from the spontaneous degeneration of the humours themselves; or *external*, and situated in the perpetual intercourse which the living human body holds with various external things; and thus the air, meat, drink, condiments, medicines, poisons, miasmata, and contagions, may introduce different acrimonies into the fluids in different ways, which being there evolved and corrupted by heat and motion, or excited into action by the vital power, induce itchings, pains, erosions, various kinds of eruptions, with irregularities in the animal motions, spasms, and many other perturbations of the functions. It is one of the laws of acrimony to act, or become more injurious to the body, in proportion as it is moved. Hence scorbutic persons are rendered most sensible of their pains upon motion or exercise of any kind; which accords with the well-known axiom, *acria nulla agunt, si non movcantur.*"* p. 95—6.

Among the principal sources of acrimony which are enumerated by Dr. Dyckman, the various kinds of food are noticed as at times producing this effect. By the continued use of vegetable aliment and acescent things an acid is generated in the stomach: digestion becomes impaired, and, as a consequence, debility follows: according to the author, this acid rarely if ever enters so largely into the circulation as to taint the mass of blood. "There is no trace of an acid," he continues, "in this humour, not even in the secreted fluids, if we except the ureal and arthritic concretions;

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* De Gorter, Tract. de Perspir. cap. vii. § 3.

and of these, the latter only can be obscurely traced to a vegetable or acescent aliment. An acid, indeed, is a foreign body; for no animal humour, properly so called, ever appears to become acid of itself. Should any acid acrimony, therefore, ever actually be discovered to take place in the blood, its origin would seem to be owing to the aliment not being sufficiently changed by the vital powers."

The effects of a diet of animal food, continued for some time, are known strongly to incline the blood to a putrescent state: the experiments of Dr. Young might be adduced in proof of this fact. That accurate observer, Dr. Ferriar, has found many of his diabetic patients rendered scorbutic by an adherence to animal food, and the same occurrence has been witnessed by others. Dr. Dyckman has cited from the writings of Lind, Sinopæus, De Gorter, Percival, Holland, &c. many other instances of an alkalescent state of the circulating fluids, as the result of an improper use of animal matter. Upon the first establishment of the New-York State Prison, about 1797, before a regular system of internal management, with respect to the diet of the house, was adopted, an alarming scorbutic disorder made its appearance among the greater part of the prisoners in that institution. They had been confined to a diet almost exclusively of animal provisions, and it was only by the liberal use of recent vegetables that the progress of the disorder was checked, and the prisoners restored to health. The opinions contained in the following quotation are doubtless founded on correct reasoning.

"An acrimony is likewise generated when the body, in a sound state, is not duly supplied with the necessary nourishment; and that the sooner in proportion as the vital power is stronger. The animal humours, in consequence of continual heat and motion,

naturally and constantly tend to a state of acrimony and putrefaction. One of the principal means employed by nature to obviate this dangerous tendency, is the regular and daily supply which the system receives of fresh and nutritious aliment. For the office of the chyle is not only to afford nutriment to the different parts of the body, but also to temperate, dilute, and correct the blood itself. When, therefore, the blood is for some time deprived of the necessary refreshment of this demulcent liquor, it naturally grows more acrid and putrescent; to such a degree at least, as will be sufficient to render the whole mass, in a few days, unfit for any of the functions of life. In a person who has suffered hunger for a long time the blood and humours are attenuated, and rendered more acrimonious, by which they incline to putrefaction; and hence, all the secretions are rendered acrid and putrescent: what is expired from the lungs becomes so very fetid and disagreeable that the person is scarcely able to endure his own breath.* Those who die of famine have their blood and all the humours first rendered highly acrimonious,† which not only corrodes the delicate vessels, and sometimes induces hemorrhages and effusions of blood in different parts of the body, but so injures or almost destroys the tender fabric of the brain and cerebellum, as to produce intolerable pains, spasms, convulsions, acute fevers, attended with raging fury, and at length death itself."‡ p. 108—10.

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* Illis qui inediam patiuntur, et quorum sanguis novo affluente chylo non reficitur, sanguis per se interno calore dissolvitur et putrescit, hinc que omnia, ex eo sanguine secreta, fœtent et acria sunt, halitus olet, saliva labia et linguam rodit, sudor ingratus est, bilis et cætera irritant, et ipsas partes solidas, in quibus hospitantur, destruunt; nisi enim opportune novo affluente latice chyloso restaurentur, totum corruit. Schwenke, *Hæmatolog.* p. 131.

† The blood of those who die of famine becomes highly acrimonious, which begets fevers, frenzy, and such a degree of putrefaction, as is utterly destructive of the vital principles. Huxham, *ut antea.*

‡ Ostendimus, etiam modico a jejunio fætere animam, etiam in purissimo feminæ corpore. Sic lac continuo rancescit, et urinæ intoleranda fit acrimonia. Sed diutius si inedia protracta fuerit, ab erosis ut videtur nervis, dolores non toleran-

Among other causes which are the source of acrimony in the body, the author mentions that the blandness of our fluids is destroyed both by an excess and by a want of motion in them. Irregularities in the functions of secretion and exertion, he states to be particularly favourable to the generation of acrimony: the same condition of our fluids is much facilitated by heat and motion. Hence, in the opinion of Dr. Dyckman, the great changes which the system undergoes in fevers.

Dr. Dyckman considers the *urine* and *insensible perspiration* both cutaneous and pulmonary, as the two principal evacuations which nature has instituted for the purpose of freeing the blood from noxious matters. It is peculiarly gratifying to notice the importance which the author attaches to these evacuations, as a means of preserving health and removing diseases. The matter of perspiration, which is not less an excrementitious discharge than that from the urinary organs, though considered by some late speculative writers of this country as perfectly bland and innoxious, is capable, when retained in the system, of effecting the most pernicious consequences. The history of febrile diseases has uniformly sanctioned this opinion; it is consonant to the experience of every unbiased observer, and the experiments of Sanctorius, Dodart, Kiel, De Gorter, Lining, Cruickshank, Home, Alexander, and Abernethy have placed this physiological fact beyond the reach of controversy. The remarks of Dr. Dyckman on this subject are the offspring of

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di nascuntur, et vasa rumpuntur, ut hæmorrhagiæ narium superveniant, et sanguis in ventriculum effusus visus sit, inque intestina. Celeriter etiam mens emovetur, et merositas primo atque mentis pene alienatio, et epilepsia, inde demum, delirium, deinde plenus furor superveniat, mortemque fere præcedat. Haller, *Elem. Physiol.* tom. vi. p. 167.

sober sense and judicious reflection, and recommend themselves to attention, both on account of their originality, and the practical instruction they impart. Did our limits permit we would readily transcribe them for the benefit of our readers.

Another condition of the blood, of a still more dangerous and complicated nature, takes place when this humour more immediately tends to dissolution and putrefaction. "Such, evidently, appears to be the case in some scorbutics, and likewise in putrid, malignant, and pestilential fevers." To the pathologist this section of the work, the subject of which the author has denominated the *dissolved and putrescent state of the blood*, will prove highly acceptable. With great modesty in the relation of his facts, Dr. D. manifests a thorough acquaintance with the nature of the principles he has laid down.

"The capacity of change in bodies is in a direct ratio with the multiplicity of their elements; so that the preservation or existence of an organized being after death is protracted so much the longer in proportion as its constituent principles are less numerous and volatile.* It is for this reason that the fluid and softer parts of our body putrefy more readily than the solids or firmer parts. Putrefaction, indeed, never takes place in those animal substances which contain only two or three ingredients, such as oils, resins, &c. but they must always be more complicated in their texture or composition.†

"But however complicated the animal substance, it does not putrefy without the presence of a certain degree of heat and moisture, which are the two great and essential requisites to pu-

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* Richerand, Elements of Physiology, p. 462.

† Thompson, System of Chemistry, vol. v. p. 770.

trefaction. Both of these requisites exist in the living system, and the former, too, according to the valuable experiments of Dr. Alexander, about that degree which is best calculated to promote the putrefaction of dead animal matter. This process also advances with greater rapidity in the open air; 'but exposure to air is not necessary, though it modifies the decomposition.' "* p. 134—5.

"When, in particular diseases, the animal fluids undergo certain changes, tending more or less to a state of putrefaction, this *tendency* to putridity ought not to be confounded with putridity itself. Such an *incipient* state of putrefaction in the humours will be more accurately expressed by the term *putrescent*, or *putrescency*, not as signifying a state of actual putridity, but a near approximation to such condition; that is, when the humours have so far degenerated. that they would undergo decomposition and putrefaction with greater ease and more facility than when in a sound and healthy condition." p. 141—2.

"With respect to the peculiar or actual condition of the blood in those diseases usually denominated putrid or malignant; though it can hardly be supposed, that a true and perfect putrefaction of this fluid, corrupting the whole mass, totally destroying its mixture, and resolving its component parts, can for the shortest time exist in the living body, it being repugnant to, and entirely incompatible with life; yet an approximation or rapid tendency to this state" "is compatible with life, though not with health, and evidently takes place in such diseases."

"This putrescency, or incipient putrefaction of the fluids in certain disorders, is evident, in the first place, from the appearances of the blood itself, when drawn from the vessels. The ingenious Dr. Milman, in his inquiry into the source whence the symptoms of the scurvy and of putrid fevers arise, very proper-

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* Thompson, *ut supra*.

ly describes the effects of putridity on the blood: "If putridity," says he, "actually took place in the vital fluid, its effects would be to break down the texture of its parts, as it does that of every body; it must render it capable of coagulation."* Now, this is a condition of the vital fluid very similar to what physicians have noticed in certain diseases, particularly in putrid, malignant, and pestilential fevers;† in some scorbutics;‡ and in the putrid,§ or petechial fever‖ of small pox; in all of which the crasis of this fluid is much injured and dissolved. The consistence is very different from the ordinary appearance of healthy blood, its texture being so much weakened, or broken down, that either the coagulum is very loose, or it does not coagulate at all, or show any disposition to separate into crassamentum and serum as usual, but the whole remains quite fluid and dissolved. Huxham** assures us, that blood of this character always putrefies very soon." p. 145—7.

The symptoms which still further point out a putrescent state of the fluids are detailed in pages 147—52.

The causes of putrescency in the animal fluids are related with much perspicuity, and at considerable length. That acute and original observer, Dr. Fordyce, having no-

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* Milman, Inquiry, p. 55.

† In morbis putridis dissolutio cruoris quoque advertitur, præsertim pestis specie, in quibus non coagulatur sanguis, sed gangrænosus et putridus reperitur; quod post protractam inediam putridus et alcalinus factus est. Schwenke, *Hæmatolog.* p. 129.

‡ *Vide* Huxham, Essay on Fevers; Ibid. De Aere et Morb. Epidem.

§ Walker, on Small Pox, p. 109. &c.

‖ ——Nam in tanta pestilentia (scil. variolæ,) sanguinis crasis dissolvitur penitus, et maxime putrescunt humores; imo cruor emissus, putris instar saniei, diffluit; nec ut solito, in frigore coagulatur. Huxham, *De Aere et Morb. Epidem.* vol. 1. p. 103.

** Essay on Fevers, p. 42.

ticed, that putrid symptoms very generally appear in the advanced stage of all continued fevers, considered debility, or a depression of strength, as constituting the principal cause that determines the putrefactive tendency of the humours in fevers. But as depression of strength produces putrescency of the fluids, so also on the contrary, adds the author, this state of the system, in whatever manner produced, occasions depression of strength, and sometimes to a degree that proves fatal. An excess of motion may produce a putrescency of the animal fluids ; and many striking facts are given in the volume before us, in confirmation of this opinion. Putrid disorders may, therefore, be generated in the individual without the agency of miasmata, or any other cause *ab extra*.

Dr. Dyckman next remarks upon the influence of marsh miasmata, of the effects arising from decomposed matter and animal effluvia. Almost every writer, both ancient and modern, in enumerating the causes of putrid epidemics, has considered the effluvia emanating from putrid animal matter as one of the most common. Our author, in some degree, dissents from this opinion.

"It is probable, indeed," says Dr. Dyckman, "that this kind of matter may have sometimes produced such an effect, yet, if we were thoroughly to examine the subject, it would, perhaps, be found to be the case much less frequently than has been generally imagined, and then, too, chiefly in the more sultry and less ventilated parts of the globe. In our northern climate, as well as in most European countries, the atmosphere is so changeable, and so constantly agitated by frequent, and sometimes violent winds, that no kind of putrid exhalations can long enough remain stationary in the open air to be exalted to a degree of virulence capable of producing general infection, and much less of acquir-

ing a pestilential influence, before it is dispersed and swept away by violent or sudden gusts of wind. When, indeed, such exhalations are confined to a very limited space, and there concentrated and deprived of all chance of escaping, they may easily acquire a virulence capable of producing putrid and very fatal distempers, though they do not arise to the malignity of the true plague." p. 167—8.

The inference that may be drawn from the opinion just quoted, and from some others advanced in this Dissertation, is, that the diseases usually termed specific, such as plague, yellow fever, &c. owe their origin to a peculiar contagious matter; that the effluvium of putrid and decomposed animal and vegetable materials, is distinct from the subtle and noxious matter constituting a specific contagion. This doctrine, advanced by the author, is conformable to the experience and observation of many eminent practitioners, who have traced the origin, and noticed the character, of the yellow fever, as it has appeared in the different districts of the United States. After a most elaborate investigation, Dr. Chisholm is fully convinced, that the product of animal putrefaction never acquires a pestilential influence; and that it is under no circumstances adequate to the production of pestilence, or the true plague. But, admitting the truth of these opinions, the agency of animal putrefaction as the source of many malignant disorders, is amply proved by Forestus, Mead, Pringle, Lind, Blane, and others: its operation in augmenting the violence of specific diseases cannot but be familiar to every one acquainted with the progress of pestilential epidemics. Some pertinent reflections on this head are contained in pages 169—75.

Dr. Dyckman concludes this part of his exercise with a notice of certain changes which the atmosphere undergoes with regard to heat and cold, dryness and humidity. The

author has here also evinced his acquaintance with the observations of Hippocrates, and other of the ancient authors, and of the most eminent of those of late times.

From his examination of the nature of the material arising from the decomposition of animal, vegetable, and vegeto-animal matter, of their effects upon the atmosphere, of the different agents by which their deleterious powers are rendered less active or more virulent; and of the morbid phenomena they produce in the human system, Dr. Dyckman next enters upon the *action of specific morbid poisons*, as those of measles, small pox, &c. This highly interesting subject, which has been so much controverted, is ably treated by the author, and is one of the most satisfactory portions of his work. He is fully convinced that the changes which arise from the introduction of the matter of specific diseases in the human constitution, depend upon the *assimilatory* or *fermentative* process.

The second general division of the present Dissertation treats of the *morbid quantity of the fluids*. The circulating fluids in the human body may become the source of disease either through *excess*, or *deficiency*, in quantity; which different states constitute the πολυχυμια and ολιγοχυμια of pathologists. The second condition of the fluids very seldom takes place; the first, an *excess* in quantity, which is usually called *plethora*, is of frequent occurrence, and has accordingly received due attention from the author.

Pathologists have enumerated different species of plethora; among the ancients, as we are informed by Galen, Paulus, and Avicenna, and as is stated by Dr. D., plethora was divided into two kinds: "of these," adds Dr. D. "one relates to the vessels, and was denominated a *plethora ad vasa*, and sometimes *ad molem*, or *ad venas*: the other has a reference to the strength of the natural powers, and was called a *plethora ad vires*. The former is always, and properly, a

true or absolute fulness; but the latter is so relatively with respect to the natural powers only. Physicians have mentioned two other kinds of plethora, viz. a *plethora ad spatium*, and a *plethora ad volumen*."

The author having with much perspicuity characterized these different sorts of plethora, which have generally been noticed in the schools, next details the various circumstances which are more especially calculated to produce such a state of the blood-vessels, particularly in advanced life. The plethora so frequently the attendant on old age also receives proper notice: the common, though palpable error, that evacuations by the lancet are improper in advanced life, is shown by our author to lead to serious results in the management of disease; and the timid practice which is generally adopted by those who are the advocates of this doctrine, is reprobated with becoming severity. The weapons with which Dr. D. here so successfully contends, are those which may always be readily and liberally furnished by the observing and experienced physician. The dreadful effects which a large majority of the medical men of this city entertain of the use of the lancet in old age, has been repeatedly taken notice of in the different quarterly reports on the diseases of New-York, as published in the Register; and to these reports Dr. D. has made frequent reference.—The whole section on plethora is eminently deserving of commendation.

"The body in advanced life is less fitted for motion or active exercise; whence the excretions must be more slow and inconsiderable, and cannot bear a due proportion to the *ingesta*. And as little blood is consumed by heat, motion, and nutrition, there must necessarily be produced a superabundance of fluids, and a plenitude, or overloaded state of the vessels; which, unless seasonably and occasionally removed by the use of the lancet, or some salu-

tary effort of nature itself, will frequently lay the foundation for many of the complaints incident to advanced life; such as giddiness, apoplexy, palsy, numbness of the extremities, gout, hemorrhoids, dropsical effusions, coughs, difficulty of breathing, hydrothorax, angina pectoris, visceral obstructions, itchings, or erysipelatous eruptions, calcarious concretions, affections of the urinary organs, pains in the joints, &c. which often arise from, or are connected with, a plethoric state of the system." p. 212.

Among other diseases which arise from, or are more immediately connected with, a morbid fulness of the blood-vessels, Dr. Dyckman dwells particularly upon gout, angina pectoris, and the different kinds of dropsies. Our opinion concerning the nature of gout has already been stated on a former occasion in this work;* and the arguments which we then offered were such as to convince us, that this disease derives most of its characteristics from plethora. The same, we think, may be said of angina pectoris:† with regard to dropsy it may be confidently asserted, that, in a great majority of instances, it arises from a morbid fulness of the sanguiferous system; that it more generally depends upon an increased excitement, than diminished absorption. We refer to the volume before us for many interesting facts, and much reasoning on these different subjects: the pathological knowledge which has been derived from the latest investigations into the nature of these three diseases, places this view of their character in a very striking light.

From the brief analysis which we have attempted to give of the present volume, the reader will be enabled to form some idea of its nature and importance. The principles which the author has laid down are demonstrated to be well

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* Register, vol. iv. p. 426.

† See Review of Dr. Bogart's Dissertation, vol. iv. p. 274.

founded, and the most ample confirmation is afforded of the utility and success of the system of practice which he inculcates. His remarks evince sagacity of observation, and exhibit a favourable specimen of inductive reasoning; his pathological information, with regard to the immediate subject of the work, is extensive and profound: his materials, though in not a few instances derived from his own experience, are for the most part selected, with great care, from the labours of the most eminent of ancient and modern authorities; and are disposed of in a judicious and satisfactory manner. His style is uniformly dignified and perspicuous, and his descriptions free from expressions that can give offence to the most fastidious reader.

ART. X. A NEW AND COMPLETE AMERICAN MEDICAL FAMILY HERBAL, *&c. &c. &c.* *By* SAMUEL HENRY, *Botanist.* New-York. Large 8vo. pp. 393. 1814.

WE are told, in the title page of this treatise, that it is "*the result of more than thirty years' experienced practice of the author among the Creek Indians.*" From this circumstance alone, we had reason to expect some valuable discoveries in the healing art. It has long been a received opinion, that the Indian natives are well acquainted with the medical virtues of many indigenous plants of which the descendants of European parents are perfectly ignorant. The want of letters among the aborigines must have prevented them from preserving, as the Grecians formerly did, a faithful record of their discoveries, from age to age; but the present generation of Indians are, nevertheless, greatly indebted to tradition for their knowledge of the virtues of American herbs. For this reason we had much to expect from the

thirty years' *experienced practice* of a *botanist* and *practitioner in physic.*

The ancient custom of sending a book into the world, with three or four introductory eulogies in prose or verse, has been pretty much neglected from the time in which professed reviewers became numerous; and the late practice, we think, is rather the better, because it may be presumed that a gentleman who carefully reads the printed copy of any work, is better qualified to speak of its merits than one who never looked at the manuscript. We speak of this return to an old custom, because we are not clear that Mr. Henry has done it with propriety. He recommends his work by publishing the "*testimonials of the estimation in which it is held by some of the most distinguished gentlemen of medical science.*"* Now the precedent, as we think, is somewhat dangerous; for though it may have happened that some distinguished medical gentlemen had such confidence in his learning, talents, and integrity, as to patronise his book without reading it, and to risk the health or the lives of their fellow-citizens by the sanction of their names, the cases are few indeed in which the same thing can prudently be repeated.

Be this as it may, we have read the book with some attention, and we do not hesitate to speak of it as a work that is perfectly unique. It does not resemble any botanical or medical work that we have ever seen: true it is, that some publications are occasionally made in London, which are nearly in the same manner, but they are greatly inferior to this in size and weight. We do not pretend to have made any experiments on the efficacy of a single receipt that is found in

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* The Hon. Samuel L. Mitchill, M. D. &c. &c James Tillary, President of the Medical Society of the county of New-York, and Samuel Thompson, Professor in Massachusetts!!!

this book: but if the author is not mistaken, he has gone far towards removing the opprobrium medicorum. He has discovered infallible cures for some diseases that have usually been counted incurable. Some of our readers, who travel through the parlour in go-carts, may be rejoiced to hear of an infallible cure for the gout: and many others will be glad to hear, that Mr. Henry, the botanist, has discovered cures, most of them infallible, for the *king's evil*, the *dropsy*, *consumption*, *chronic rheumatism*, the *cancer*, *fistula in ano*, *worms*, *jaundice*, *epileptic fits*, *gravel*, and *deafness!!*

Although the work is called the *American Herbal*, the reader is not to suppose that all the plants described in this book, about one hundred and fifty, are peculiar to America. The oak, juniper, and peach, are found in other countries, and so are flax, oats, senna, hops, and a hundred other plants therein recommended.

As this work is purely American, and will probably cross the ocean as soon as we have peace, we consider it our duty, as Americans, to bespeak the candour of the London and Edinburgh reviewers. If they find any deviations in particular words, or in the general construction of a sentence, let them not charge the nation in general with ignorance of our language: as when they accuse us with the southern provincialism *toat* instead of carry, or the eastern word *improve* instead of occupy.

We have seen more instances than one of an English author making an apology for the style in which he wrote, because he had resided too long in a foreign country. The critic is bound to give the same indulgence to an American writer that is claimed by his fellow subjects; he must admit that a residence of thirty years among a savage nation, of a strange language, must have altered the style of our botanist. The critic will also recollect, that the occasional introduction of French words or sentences into English compositions is quite fashionable, at present, in England, as the

English language is not sufficiently expressive. Our botanist has faithfully imitated this example; but he introduces words of the Creek language, instead of the French. Thus in his *medical secret* No. 9, he recommends a certain ointment that may be of great use to a man who understands the *juvansia*, and *ledensia*. These words being in the *Creek* language, lead us to believe, that a man should be master of that tongue, in order to make a proper use of his cancer ointment. In the beginning of his appendix, Mr. Henry gives us to understand that he has executed *multum in parvum*. This being another specimen of the Creek language, very naturally excites an inquiry concerning the Creek nation, whether they are not the real descendants of the Welch colony that migrated to North America, some hundred years ago? That such is the fact we shall readily believe, provided it can be established, that Wales was originally settled by a colony from the banks of the river Tiber; for the Creeks seem to imitate the ancient language of Rome, quite as much as the present Italians do.

The British critic may possibly be surprised at the remarkable hostility that exists, in many cases, between the nominative and its verb, in the compositions of our botanist. Thus he tells us, that he writes in a plain, familiar style, that his book may be understood by *all who reads:* it is, however, to be presumed, that this coupling of a plural and singular number together is in common use in the Creek nation.

Mr. Henry seems to value himself much more upon the excellence of his numerous receipts for curing diseases, than upon his descriptions of the several plants. Most of the plants had formerly been described by other writers, but the receipts are of his own invention: some of them, as he says, are worth forty or fifty dollars, and some of them are worth hundreds. They have long been secrets confined to his own bosom, but now made public for the benefit of his

subscribers, and the good of mankind. It is amusing to observe how his prescriptions are fitted to patients of different tempers: thus he gives two receipts for curing a felon, or a painful swelling in the finger. One of the receipts will perform the cure in an hour, but the other receipt, for the accommodation of people who are in love with pain, may remove the complaint in ten or twelve days. As we have not, as above stated, tried the efficacy of a single receipt of the fifty-six that are given, we do not vouch for their infallibility; but as the reader may wish to see one or two of them as samples, we shall give them two receipts for the cure of deafness.

1. "Roast a beaver's tail before the fire, and let the pa-
"tient drop seven drops of the oil, as hot as he can bear, in-
"to the ear every night and morning, stopping the ear with
"wool."

If the patient could persuade a friend to drop the oil into his ear, perhaps it might be quite as curative.

2. "Heat a knitting kneedle red hot, and hold it over the
"patient's ear, and drop a little of the urine of a pole-cat on
"the hot needle, so that seven drops fall into the ear every
"night and morning, and stop the ear with wool until he has
"recovered his hearing."

Our readers, in general, know with how much ease the articles here mentioned may be obtained, and how pleasant the odour would be. Perhaps some of them would prefer the disease to the remedy; however this may be, we confess that we cannot discover what is the rule by which Beavers and Pole-cats are classed under the head of American Plants.

But badinage aside. Seriously do we regret the appearance of the present performance. A more gross imposition upon the community, than is exhibited by the publication before us, has not come within our knowledge.

ART. XI. PHARMACOEPIA CHIRURGICA *in Usum Nosocomii Novi Eboracensis.* By VALENTINE SEAMAN. M. D. *Lecturer on Clinical Surgery in the New-York Hospital, &c.* New-York. 12mo. pp. 47. 1811.

IT must, long ere this, have been observed by our readers, that the Review department of the Register is conducted rather upon the principle of selection than that of general notice. We have taken this occasion to remind our friends of this circumstance in answer to the repeated solicitations that have been made to us to offer a review of the above pamphlet. If any consideration could induce us to violate our general plan, it must be in cases of the nature of that now before us; when dulness and incompetence, led on by the instigation of vanity, are induced to usurp the prerogatives which exclusively belong to genius and ability, to assume first, the dignified station of teacher, and next the still more commanding rank of author. In such cases there is indeed room for animadversion, and when we consider the pernicious consequences which must unavoidably result from a book of the character of that we have just mentioned, we know there is ample employment for all the severity of criticism. Until at this time we could not have supposed there was any man, having the least regard for his profession, who would have offered to the public a work so destitute of merit and so abounding in errors; errors in language,* for which, had they been committed by the dullest tyro, of three months standing at a grammar school, he would have received

* See the name of the work which we have copied *literatim* from the title page.

the severest flagellation from the most lenient pedagogue; errors in science of which we could not suppose any man who had ever received the degree of *medicinæ doctor* to have been guilty.

In justice to the enlightened board of governors who direct, with so much honour to themselves, and with such great advantage to the community, the concerns of the New-York Hospital, it is proper to state, that this publication, purporting to be a Pharmacopœia of that Institution, never, we believe, received the sanction of their approbation; and as far as we have learned, a very different manual of Pharmacy is in use in that excellent establishment.

DOMESTIC INTELLIGENCE.

College *of* Physicians *and* Surgeons *of the* University *of the State of* New-York.

The arrangement agreed on between the Professors of the College of Physicians and Surgeons of the City of New-York, and the Faculty of Physic of Columbia College, having been approved by the Trustees of the respective institutions, was confirmed by the Honourable the Regents of the University, at their meeting held on the 7th of March, 1814. A union of the Medical Schools of New-York being thus happily and honourably effected, this Medical establishment is placed on the most permanent foundation, and, aided by the patronage of the Legislature, affords the most ample system of Education in the several branches of Medical Science.

Officers &c. *of the* College *of* Physicians *and* Surgeons *of the* University *of the State of New-York, upon the Union of the two Medical Schools in* 1814.

Samuel Bard, M. D. *President.*

Benjamin De Witt, M. D. *Vice President, and Professor of Natural Philosophy.*

John Augustine Smith, M. D. *and* Wright Post, Esq. *Joint Professors of Anatomy, Physiology, and Surgery.*

David Hosack, M. D. *Professor of the Theory and Practice of Physic, and Clinical Medicine.*

William James M'Neven, M. D. *Professor of Chemistry.*

William Hamersley, M. D. *Professor of the Clinical Practice of Medicine.*

Samuel L. Mitchill, M. D. *Professor of Natural History.*

JOHN C. OSBORN, M. D. *Professor of Midwifery, and the Diseases of Women and Children.*

JAMES S. STRINGHAM, M. D. *Professor of Medical Jurisprudence.*

VALENTINE MOTT, M. D. *Professor of the Principles and Practice of Surgery.*

JOHN W. FRANCIS, M. D. *Professor of Materia Medica.*

TRUSTEES.

Samuel Bard,
Benjamin De Witt,
John Augustine Smith,
David Hosack,
Wright Post,
William James M'Neven,
Samuel L. Mitchill,
Hugh Williamson,
William Hamersley,
John D. Jaques,
Thomas Addis Emmet,
John C. Osborn,
James S. Stringham,
John W. Francis,
Valentine Mott,
Joseph Bloodgood,
Andrew Morton.

John D. Jaques, *Treasurer.*
John W. Francis, *Registrar.*

ADDITIONAL *Notice of the* LECTURES *delivered in the* COLLEGE *of* PHYSICIANS *and* SURGEONS, *New-York.*

[A syllabus of the several courses of Lectures delivered in the University of the State of New-York, accompanied the Historical Sketch of the College of Physicians and Surgeons, published in the Register, for July last. For the purpose of rendering more satisfactory the account of the system of the medical institution now provided for in this University, the present additional notice of other courses of Lectures is inserted.]

ANATOMY, SURGERY, AND PHYSIOLOGY.

THE Lectures on *Anatomy*, *Physiology*, and *Surgery*, are delivered by PROFESSOR WRIGHT POST, M. D. The anatomical course commences with the history of anatomy, from the earliest ages to the present period; after which the first object is to

take a general view of the principal parts of which the body is composed, endeavouring to explain the use of each, and manner of connexion, so as to give a general idea of the animal economy. The professor then proceeds to investigate, with the greatest possible accuracy, the more particular branches of anatomy, by first unfolding the structure of the different organs, and afterwards explaining their functions. In prosecuting this inquiry, the body is divided into the following systems: 1. Osseous, 2. Muscular, 3. Chylopoietic, 4. Vascular, 5. Secretory, 6. Nervous, 7. Respiratory, 8. Connecting and communicating, 9. Defensive, 10. Genital. Under one or other of these heads any part of the human body may be arranged; and this division is preferred to that in more common use, as being equally expressive and more comprehensive.

Having explained the structure and functions of the different organs in their natural state, an attempt is made to give a correct idea of the changes which they undergo by disease. In this investigation, it is not considered sufficient barely to mention and exhibit the appearances which manifest themselves upon dissection, and to explain the manner of their production, which, strictly speaking, would be all that *pathology* implies, but also to point out the symptoms which characterize each individual disease, and to recommend such treatment as, from experience, has been found most beneficial.

The Professor of Anatomy will further, on all occasions, keep in view the application of Anatomy to Surgery. This will lead him frequently to make observations on Surgery; and as the importance of the subject demands it, so it will be his particular aim to show where the skill of the surgeon and the success of his practice will depend upon an accurate knowledge of anatomy.

It may not be uninteresting to those who wish to be informed of all the advantages which the School of Anatomy in the College of Physicians and Surgeons affords, to state, that a very extensive collection of anatomical preparations is added to the College; in which the intimate structure of all the important organs in the body is made so conspicuous, that where description fails

to give clear concepti ns, the eye may convey to the mind a just and accurate knowledge.

The Lectures on Anatomy, &c. are delivered *daily* throughout the session.

OBSTETRICS AND THE DISEASES OF WOMEN AND CHILDREN.

The Lectures on *Obstetrics* and the *Diseases* of *Women* and *Children*, are delivered by PROFESSOR JOHN C. OSBORNE, M. D. This course commences with a brief history of the progress of this branch of medicine from the earliest ages to the present time. The sexual characteristics of the female constitution are examined and described. The difference in the anatomical structure of the male and female body will include a minute description of the structure and functions of the organs of generation of the latter: in describing these functions the theories of generation and menstruation are particularly attended to. The diseases of these organs, and the suspended or irregular exercise of their functions are particularly described, and the modes of treatment for their relief copiously narrated.

The opinions of philosophers and physicians on the nature of conception, and the agency of either party in producing it, is followed by a description of the symptoms indicating its existence, and the complaints incident to the pregnant state, and the modes of relieving them.

The period of utero-gestation and the symptoms of labour; the various species of labour, natural, laborious, preternatural, and complicated, are described, and the modes of affording assistance are exemplified on the machine. To this succeeds the treatment of the parturient patient and the infant: the various diseases of infancy are particularly attended to.

These lectures are delivered *twice a week*, and practical illustrations given at the lying-in ward of the hospital, of such important cases as may occur during the course.

CLINICAL PRACTICE OF MEDICINE.

The Professorship of the *Clinical Practice* of *Medicine* is held by WILLIAM HAMERSLEY, M. D. In this course of lec-

tures are delivered the general principles of the practice of physic, illustrated by the Clinical practice of the New-York Hospital. The importance of this course needs no elucidation. A regular record of all the important cases is taken, to which students have access, and may copy at their pleasure.

THE PRINCIPLES AND PRACTICE OF SURGERY.

The Lectures on the *Principles* and *Practice* of *Surgery*, are delivered by PROFESSOR VALENTINE MOTT, M. D. The course is arranged under two heads: 1st. Operative surgery —2d. Medical surgery. The first comprehends the various operations and accidents to which the body is liable, and the second the numerous diseases which fall under the notice and care of a surgeon.

The following subjects are treated of in the operative part of the course:

Irritation and sympathy, and the influence of the mind upon the body, as they apply to surgery.

Inflammation, and its consequences.

Injuries of the head; divided into external, or affections of the integuments; and internal, or concussion and compression, and fungus cerebri. Operation.

Aneurisms, with the general doctrine; divided into external and internal. External, as popliteal, inguinal, carotid, subclavian, &c. Internal, aorta, &c.; varicose and aneurism from anastomosis; aneurism of the extreme arteries. Operations.

Hydrocele. Its various kinds; affects other parts of the body than the scrotum; spina bifida, &c.

Diseases of the testicles. Hydatid, scirrhus, scrophulous, pulpy, and fungus testicle; castration, sarcocele, sclerocele, varicocele, hæmatocele, &c.

Diseases of the breasts. Hydatid, scirrhus, pulpy or soft cancer, fungus hæmatodes, and steatomatous tumour. Operation. Painful tumour in young females.

Retention and suppression of urine. Difference; causes; operations for retention; opening into the urethra; treatment of suppression.

Diseases of the eyes. Ophthalmia; cataract; various kinds; operations; extraction; depression; anterior operation of Saunders; Dr. Adams' operation; artificial pupil; staphyloma; hydrophthalmia; carcinoma; extirpation; amaurosis.

Fistula lachrymalis. Nature; treatment; operation.

Polypi in the nose, throat, &c. Treatment.

Removal of the tonsil gland.

Dropsy of the abdomen. Different kinds; paracentesis.

Fistula in ano. Nature and treatment.

Piles and excrescences. Treatment.

Amputations. These are shown upon the recent subject, with all their varieties.

Amputation, and cancer of the penis.

Tic douloureux. Its nature; medical treatment; operation upon the different nerves.

Bronchotomy. In suspended respiration in drowning and hanging; for noxious airs; tumour pressing on the trachea; extraneous substances in the trachea, &c. Different modes of operating.

Lithotomy in men. Calculi found in five different parts of the urinary organs. Different kinds of calculi; chemical composition. Various modes of performing the lateral operation.

Lithotomy in women.

Hernia. The new anatomy demonstrated, and the varieties of hernia extensively described.

Fractures. Generally and particularly.

Sprains. Nature and treatment.

Dislocations. These are particularly described. Under this head are considered ganglia, abscesses in the thecæ of the fingers, loose cartilages in the knee joint, dropsical collections of synovia, in the knee joint, bursa between the patella and tibia, under the rectus tendon, &c.

This comprises the subjects to be treated of in the operative part of the course, though the order will be changed as the teacher may deem proper for the benefit of the class, and the best use of the materials on hand.

The second division of the course, or the diseases of surgery, commences with the most common of all, to wit:

Gonorrhœa. Its consequence, as strictures, fistula in perineo, enlargement of the prostrate gland, irrritability of the bladder, palsy of the bladder, chordee, hermorrhages from the urethra, sympathetic buboes, inflamed testicles, gleet. External gonorrhœa, gonorrhœal ophthalmia and rheumatism; impotence. Gonorrhœa in women; gleet.

Chancre. Its consequences, phymosis, paraphymosis, mortification of the penis, sloughing of the urethra, bubo, sore throat, eruptions, phagedenic ulcer, bones of the nose diseased, nodes, bones of the cranium diseased, chancres in women.

Warts and anomalous affections.

General observations on the venereal disease, and on the action of mercury. Gonorrhœa and chancre not produced by the same poison; experiments which prove it.

Erythema Mercuriale, or hydrargyria. Nature, treatment.

Scrophula. Disease of the lymphatic glands, tabes mesenterica, white swelling, disease of the hip joint, of the spine, psoas and lumbar abscesses, scrophulous disease of the testicles and ophthalmia, purulent eye.

Diseases of the bones. Caries, necrosis, spina ventosa.

Cancer. Its consequences and treatment.

Wounds. Incised, lacerated, contused, and punctured. Tetanus, &c. Wounds of arteries, veins, nerves, tendons, abdomen, stomach, intestines, &c. Chest, throat, and joints.

Gun shot wounds. Arteries, chest, abdomen, &c.

Frost-bitten limbs.

Burns and scalds.

Tumours. Adipose, or steatomatous; encysted, lymphatic glandular, fungus hæmatodes, hydatid, cutaneous, medullary, exostosis, nevi materni, bursæ muscosæ, and bronchocele.

Bandages. Application and use.

Poisons. Animal, vegetable, mineral, and morbid.

Dr. Mott will perform all the various operations upon the dead body before the class, and enable such gentlemen as wish to

operate themselves, to perform them under his immediate direction. Those parts of the course which are most important to the military and naval surgeon, will claim particular attention.

The lectures are continued *daily* throughout the session.

MATERIA MEDICA.

The Professorship of the Materia Medica is held by JOHN W. FRANCIS, M. D. The Materia Medica embracing, in its fullest signification, all those substances which are employed, either in a simple or combined state, for the cure of diseases, the professor of this department of medical science arranges the various subjects of the course under two general divisions, *ailments* and *medicines*. Under the former head are included all those substances had recourse to as articles of nutrition, and which are more especially calculated either for augmenting the body or repairing its continual waste. The nature of the principal alimentary substances is examined, and their effects upon the constitution are considered: the importance of a due regard to diet and regimen both in health and disease is here also pointed out. This view of aliments serves, therefore, as an introduction to the various objects embraced in the second part of the course.

The second division, that *of medicines*, comprehends all those substances whose operation is particularly adapted to excite such changes in the system as are calculated for the removal or alteration of its *morbid* state.

The subjects of inquiry which claim attention when considering the articles of the materia medica being properly comprised under three heads, that of natural history, of chemical and pharmaceutical history, and of medical history, the utility of a knowledg of remedies according to this three-fold view is shown, and its practical importance enforced.

A concise account is next given of the different systems of classification of the articles of the materia medica that have been projected. Having unfolded the principles upon which both the older writers and the more modern proceeded in establishing their

respective methods of arrangement, and endeavoured to show that the errors of the former are to be attributed chiefly to their philosophy, too little observant of facts, and too prone to hypothesis; and that the defects in the systems of classification adopted by the latter have their origin principally in the very nature of medical science, which arrives to perfection only by the accumulated observation of ages, the learner is next taught to consider the operation and effects of remedies as affording the only accurate and certain knowledge of their medicinal powers. The classification of the articles of the materia medica adopted in this university, is, therefore, founded on a knowledge of the effects of remedies on the human constitution. But while a due regard is, in this respect, paid to every substance that comes under notice, an attempt is at the same time made to form and preserve an association between the active properties and virtues of remedies, and the nature and seat of the various diseases in which they may be employed: such an association cannot fail to prove in an eminent degree useful, inasmuch as an intimate connexion is thence formed between the general indications of cure, and the means by which they are fulfilled; the peculiar character and type of disease may suggest to the mind the proper remedy for its removal; and vice versa, the nature and qualities of medicines will associate with themselves the diseases and condition of the system in which they are indicated.

The better to understand the particular characters of the several classes into which remedies may be divided, the professor of the materia medica considers the human body as made up of four distinct parts; each, however, to a certain degree connected with the other, and reciprocally affected by similar causes. These parts are,

1. The brain and nervous system;
2. The heart and blood-vessels;
3. The absorbing, secreting, and excreting system; and
4. The various fluids of the body.

In correspondence with this view of the human structure,

therefore, Dr. Francis distributes the various articles entering into the materia medica into *four* classes.

1. Those remedies whose operation is chiefly confined to the *nervous system*, and which for the most part exhaust themselves in their operation upon that part of our frame. Under this head is arranged,

A.—Stimulants, embracing the *diffusible stimuli* or *excitants;* and the *permanent stimuli* or *tonics*, including *bitters* and *astringents.*

B.—Sedatives, containing *narcotics* and *antispasmodics.*

2. In the second class of remedies are associated those which particularly operate upon the *heart and blood-vessels*, diminishing the quantity and the momentum of the circulating mass of fluids. Under this head is considered,

Bloodletting, both *general* and *local;* and the various means employed for that purpose.

3. In the third class of remedies are arranged all those substances which act upon the secretions and excretions of the system. Such are *emetics, cathartics, sudorifics, expectorants, diuretics, and emmenagogues.*

4. The fourth class embraces those remedies which are employed for the purpose of correcting any *vitiation* or *morbid* condition which may exist in the various fluids of the body. This class contains *antiseptics* and *lithontriptics.*

With regard to the manner in which each article of the materia medica is treated: having considered the character of any class of remedies, the various substances proper for that class are associated together. If the substance be a vegetable, the generic and trivial name of Linnæus is first given; then the class and order to which it belongs in the sexual system; next the natural order, as improved by Murray in his Apparatus Medicaminum; the country of which it is a native, its different places of growth, the officinal name, the vulgar name, and the part or parts of the plant employed in medicine, are severally stated. Its action on the body is next considered, and, as far as facts warrant, the manner of its operation explained. The diseases in which it is service-

able are next pointed out; the dose and form in which it is prescribed; the auxiliaries with which it may be joined; the pharmaceutical preparations and compositions; and, lastly, references are made to the most useful authors who have written on the subject under notice.

Concerning the resources of this country: as no region of the earth is more fertile, and more valuable for the productions of its vegetable and mineral kingdoms, the teacher endeavours to communicate, so far as it regards the materia medica of the United States, all the information essential to this object. In doing this he avails himself of the physical investigations of Mitchill, Bartram, Volney, Kalm, Muhlenburg, Belknap, Cutler, Williams, the Michaux, Pike, Stoddard, Brackenridge; Schoepf, Barton, and others.

As far as practicable, specimens are exhibited of all the various substances as found in their native state, and of their different officinal preparations.

The Lectures on the Materia Medica are delivered *three* times a week during the session.

MEDICAL JURISPRUDENCE.

The Lectures on Medical Jurisprudence are delivered by Professor James S. Stringham, M. D. The different subjects to be comprehended in this course are as follows:

1. Some general observations relative to the various divisions of age which have been proposed. Nævæ maternæ particularly considered.

2. The question examined, as to the propriety of extracting a fœtus from the uterus of the mother, who may have died during parturition, and what are the appearances by which we can positively decide as to the actual death of the mother.

3. Virginity; under which head are included observations relative to rape and the crime of sodomy.

4. Concealed pregnancy.

5. Pretended pregnancy, with the means of detecting the imposition.

6. Physiological remarks as to the period at which a fœtus may be considered as first animated, and the marks by which an animate may be distinguished from an inanimate fœtus.

7. Abortion.

8. Superfœtation.

9. The doctrine of moles and monstrosity considered, particularly of that species termed hermaphrodites.

10. Impotence and sterility, with the various causes by which they may be induced.

11. Feigned diseases.

12. Concealed diseases; under which head are noticed those contagious diseases which are most frequently concealed, with the mode of detecting them.

13. Poisons, with the various modes in which they may be applied, the tests by which the metallic poisons may be distinguished, and the proper antidote for each of them.

14. The particular manner in which the bodies of those suspected to have died in consequence of violence are to be examined.

15. Wounds; the circumstances necessary in order to constitute a fatal wound, and the consequences arising from wounds of the different viscera of the body.

16. Infanticide; the different modes by which the detection of this crime may be effected are particularly noticed.

17. Death in consequence either of hanging or drowning; its proximate cause in both cases, and the most approved methods of restoring suspended animation in consequence of either of these causes are pointed out.

18. Observations on the necessity of medical etiquette, together with an account of that most generally adopted.

19. The propriety of permitting certain manufactories, in thickly inhabited places, slaughter houses, &c. considered; with the means by which the unpleasant consequences arising from their proximity may be prevented.

20. The salubrity and insalubrity of particular kinds of water, with the principal causes of such differences.

Medical Commencement in the University of New-York.

Agreeably to a resolve of the Hon. the Regents of the University, the annual commencement for the purpose of conferring the degree of Doctor of Medicine, in the College of Physicians and Surgeons, was held on Tuesday, the 3d of May last. The exercises took place in the hall of the college, and were honoured with the presence of a numerous and respectable audience, among whom were the Regents of the University, the Trustees, Professors, and other officers of the College; the President, Provost, and Professors of Columbia College, &c. The degree of Doctor of Medicine was granted to the following eleven gentleman who had been students of the University, had undergone the several examinations required by its laws, and publicly defended their respective inaugural Dissertations. After the candidates were vested with their academic honours the president, Dr. S. Bard, delivered a Charge to the graduates.

Cornelius E. De Puy, of Ulster county, N. Y. "On External Applications."

Charles De Witt Hasbrook, A. B. of Ulster county, N. Y. "On the Anatomy of the Great Sympathetic Nerve."

Joseph Hanson, A. B. of Rensselaer county, N. Y. "On Typhus Fever."

Ansel W. Ives, of Connecticut. "On the proximate cause of death, from Suspended Respiration, in drowning, and hanging, with the means of Resuscitation."

James Fergus M'Ree, of North Carolina. "On the Bilious Remittent Fever of North Carolina."

William F. Quitman, of Dutchess county, N. Y. "On the Nature and Treatment of Gout,"

Abraham D. Spoor, of Greene county, N. Y. "On Cutaneous Perspiration."

Ferdinand S. Schenck, of New-Jersey. "On Dysentery."

William Van Deursen, A. M. of New-Jersey. "On the Typhoid Pneumonia."

Samuel Woodruff, of Albany county, N. Y. "On the Vis Insita."

Robert H. Wilson, A. M. of the District of Columbia. "On Worms."

At the same time the honorary degree of Doctor of Medicine was conferred upon Wright Post, joint professor of Anatomy, Physiology, and Surgery in the University of New-York, and John C. Osborn, Professor of Midwifery, and the Diseases of Women and Children, in the same Institution.

New-York Historical Society.

At a meeting of the New-York Historical Society, held on Tuesday, the 11th of January, 1814, the following persons were elected officers for the ensuing year:

Hon. Egbert Benson, LL.D. President.
Hon. Gouverneur Morris, First Vice President.
Hon. De Witt Clinton, LL.D. Second Vice President.
David Hosack, M. D. Corresponding Secretary.*
John Pintard, Esq. Recording Secretary.
Charles Wilkes, Esq. Treasurer.
John W. Francis, M. D. Librarian.

Standing Committee.

William Johnson, Esq. Dr. Samuel L. Mitchill,
Rev. Dr. J. M. Mason, John M'Kesson, Esq.
Gulian C. Verplanck, Esq. Peter A. Jay, Esq.†
Anthony Bleecker, Esq.

Committee of Publication.

Dr. David Hosack, John Pintard, Esq. and
Dr. John W. Francis.

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* Vice Rev. Dr. Samuel Miller, resigned.
† Vice Dr. David Hosack, elected Corresponding Secretary.

Arrangement and Description of the Codfishes of New-York: addressed to the Editors, by S. L. Mitchill, M. D. *Professor of Natural History, &c.*

For several years I have found it needful, from time to time, to turn my attention to the history and economy of fish. The treaty concluded with Great Britain on the 3d Sept. 1783, had secured to the citizens of the United States the right to take fish of every kind on the several banks of Newfoundland, in the gulf of St. Lawrence, and at all other places in the sea where the inhabitants of both countries used heretofore to fish; with various other privileges and advantages. Congress had at several times legislated on these fisheries, and made rules for governing the fishermen employed therein. In 1802 the president, in his message to congress, said that "one of the landmarks by which we were to guide ourselves on all our proceedings, was to foster our fisheries as nurseries of navigation and for the nurture of man." The house of representatives referred this subject to a select committee, and on the 12th Feb. 1803, Mr. Huger, of South Carolina, made a report which was laid upon the table. It was afterwards my lot to make, in an official capacity, as chairman of the committee of commerce and manufactures, a report to the same body, on a memorial from the inhabitants of Nantucket. This was on the 7th Nov. 1803, and on the 15th it was resolved to institute a new inquiry into the fisheries. On the 2d Jan. 1804, the same gentleman who had considered the paragraph of the message, brought forward a very circumstantial and instructive body of information on the cod and whale fisheries. It is indeed the last document extant upon those branches of American industry. The former of those employments was at that time judged to be sufficiently thriving, without further legislative encouragement: and the project

of a bounty for reviving the declining whale fishery was not adopted.

Since that time, fish and fishing have presented themselves to my view, as more important than I ever before considered them. In the market and waters of New-York, there was great opportunity to gather information. I have sought intelligence from every practicable source. I send you the result of my researches as far as they go. They amount to *eleven* species, and *six* varieties of the cod. And I have no doubt that in due time I shall find several more.

Our rivers, bays, and seas, abound with fish. Many sorts of them are evidently unknown to science; and others very badly described.

The renewal of the discussion about the fisheries has given an interest to almost every thing relative thereto. The history of one sort of cod, naturally led to that of his congeners, or kindred sorts. A family of creatures which are all of them savoury, nutritious, and wholesome, as the food of man, and several species of which are among the most prolific and numerous of the finny tribes, must be considered by every judicious person as worthy of a particular and intimate acquaintance. And this is acknowledged by the politician, the naturalist, the sportsman, and the housekeeper.

When it is considered that the enjoyment of the codfishery is involved in the present war, scarcely any person can entertain a doubt of the usefulness of an acquaintance with the more plentiful, and highly-prized species. This list may probably aid the statesman in the attainment of such knowledge; and if it should fail in this object, it may serve as a manual or guide to him who wishes to understand the history of one of the families of New-York fish.

Cod. Gadus.

Generic character.

Head smooth; Gill membrane, seven rayed. Body oblong, covered with deciduous scales. Fins all covered by the common skin. Dorsal and anal generally more than one, the rays unarmed; ventral fins slender, ending in a point.

* Codfish with three dorsal fins and bearded mouth.

Bank Cod. Gadus morhua.

Great Cod fish, of an ashen colour, with yellowish spots, broadish scales, and first ray of their anal fin stiff or spinous.

This fish is found at times in the New-York market, being caught in the sea near Nantucket and beyond. We get him, however, only in the cool season; for the summer temperature of our waters kills him. He is therefore only found between November and April.

The character is so exactly that of the later European writers, that I deem it unnecessary to give a particular description of him. He is not common on our stalls. But the species next to be mentioned is much more frequent.

Common Cod of New-York. Gadus callarias.

With ashen back, white belly, head and body spotted with brown; even tail, and projecting upper jaw.

A middle-sized fish of this species is twenty-five inches long, and weighs five pounds and a half. Colour pale—also prettily spotted with yellowish. The lateral line grows broader and plainer until it reaches the part of the body situated between the third dorsal and second anal fin. It is nearly straight until it reaches the place of a line drawn perpendicularly from the vent. Tail even, jaws, palate, and throat, all toothed. Lower jaw has one row of teeth; upper several. First and second rays of the ven-

tral fins separated or bifid; and their hue reddish or whitish. No spines upon the anal or any other fins. Upper jaw longer than the lower.

I have noted this fish as the *Dorse* or *Gadus Callarias*, notwithstanding his great size and some other well-marked differences. Should the character not correspond, he must be considered a distinct species.

Of this fish there is a remarkable variety, denominated

(b) The SHOAL-COD, or SCHOOL-COD; *(Gadus arenosus)* which is specifically the same with the preceding, but has less of the yellow complexion. The hue is more of a greenish brown, with spots of less distinctness. The fishermen say that the Shoal cod is taken on the level and sandy bottoms, while the yellowish or *Rock-cod* to be immediately mentioned, is caught on the rough grounds; and perhaps this reason is a practical and sufficient one.

There is a further variety, called

(c) The ROCK-COD; *(Gadus rupestris)* which is chiefly distinguished by his dwarfish size, rusty complexion, and more chubby shape.

TOM COD. GADUS TOMCODUS.

The length is about ten or twelve inches. Snout round and blunt; mouth considerably under, and of moderate size; small teeth in the jaws, palate, and throat. Tongue distinct, white, fleshy, and small; lateral line incurvated upward. Ventral fins bifid; the second ray longer than the first. Eyes small and yellowish; tail convex.

This fish appears under various forms, which make his history difficult to write. I shall attempt an enumeration of the principal.

(b) G. TOMCODUS *fuscus;* or *brown tomcod*, with the back and upper parts of the sides a mottled brown or olive. Chin and belly often carnation.

(c) G. TOMCODUS *luteus;* or *yellow tomcod*, with darker brown or olive on the back and sides, intermixed with yellow there and along the belly.

(d) G. T. *luteo-pallidus*, or *yellowish-white tomcod;* with yellow and white mixed with different shades of brown and olive.

(e) G. T. *mixtus*, or *mixed tomcod;* with yet other modifications of colours, and with variations in the rays of the fins.

All these varieties of the tomcod and those of the *Gadus pruinosus* to be mentioned afterward, are sold in the New-York market indiscriminately, as individuals of the same species. And *Tomcod* and *Frostfish* are used to indicate the same animal. Nevertheless, I have reason to believe them distinct.

On contracting the tomcod with the frost fish, (that is. the G. *tomcodus* with the G. *pruinosus* of the present arrangement.) there were observed to be several marks of difference: 1. in the magnitude, the tomcods being larger: 2. the tomcod has a cirrhus, while the frost fish has none: 3. in the tomcod the second ray of the ventral fin is longest, whereas in the frost fish the first ray is the longest· 4. in the frostfish there are frequently traces of five, six, or more bars or zones of a brown colour along the sides, while the tomcod is merely mottled.

Still both the species and their varieties are called, without any discrimination, tomcod or frost fish, according to the fisherman's fancy.

The difference of sex and age evidently increases the varieties of this species. And so numerous and perplexing are they, that the specific name might with propriety be *multiform* or G. *polymorphus*.

As far as I can ascertain by reiterated countings, the more usual number of the rays in the fins is as follows; branchial, seven; ventral, six; pectoral, seventeen; dorsals, thirteen, eighteen, and nineteen; anals, twenty-two and eighteen: caudal, thirty-nine.

Haddock. Gadus Æglefinus.

Has a whitish skin, a black lateral line, forked tail, and an upper jaw longer than the lower.

Is occasionally found among the other species of Gadus in the New-York market. And in addition to the before-mentioned cha-

racters, is distinguished by the dusky cast of his back, his large eyes, and small round scales. Length when full grown about twenty inches.

Blennoid Cod. Gadus Blennoides.

So called from his resemblance to a Blenny. The mouth has minute rows of sharp teeth in both jaws. Two toothed spots or patches on the palate. Throat streaked lengthwise. Lateral line curved, eyes large. Colour brown, but less so on the belly than back. Flesh soft, vent nearer the head than tail. Ventral fins bifid and extending like threads. Tail even; or rather projecting toward the middle rays. The branchial rays are six; pectoral, thirteen; dorsal, ten, sixteen, thirty-six; ventral, two; anal, forty-five; caudal, twenty-three.

* * Codfish with three dorsal fins, and beardless mouth.

Frostfish. Gadus pruinosus.

The difference between this fish and the tomcod has been already stated. He is about eight or nine inches long. The back is brown, and belly whitish. Lateral line curved. Eyes small, black, and pretty; lower jaw shorter than the upper; vent nearer the head. Caudal extremity even or nearly so. Like the tomcod, caught in the New-York salt waters all the year round; but more abundant in autumn at the season of frost; whence his name.

Rays, Br. 7. P. 13. V. 5. D. 14, 15, 16, A. 18—19. C. 36.

New-York Pollack. Gadus Purpureus.

With greenish spotless back, forked tail, and purplish fins.

His length is about twenty inches, and depth five. The snout is rather pointed. The lower jaw is longer than the upper. Tail divided. Ventral fins short and small. Colour of the lips, inside of the mouth, and gill-covers purplish and dark. Jaws finely toothed. Small patches in the palate. Eyes large and silvery. Lateral line white, straight, and broad; becoming more short and narrow toward the tail.

Colour of the back a dusky olive or bottle green without spots. Sides and outer gill-covers pale, with tints of yellowish, and becoming whiter at the belly and chin. Dorsal and pectoral fins dusky green; caudal and both anals purple; ventrals faintly reddish. Though there is some diversity in these particulars. The rays in the fins are Br. 7. V. 6. D. 15—19—23. P. 21. A, 20—19.

* * * Codfish with two dorsal fins.

Hake. Gadus merluccius.

With double rows of sharp teeth, broad and scaly lateral line; beardless chin, and even tail.

The specimen before me is about fifteen inches long; two deep; and five in girth. Caught with the other cod. The head is rather long; and the body is slender, and tapers away to the tail. The colour of the back is a pale brown; of the belly a dirty white. No cirrhus to the chin. The mouth is wide and capacious. The lower jaw is longer than the upper; and both are armed with acute and hooked teeth, in a two rowed and formidable array. The back part of the tongue, the palate, and the throat are also patched with teeth. The palate, throat and lining of the gill-covers are dark-coloured. Grooves and channels on the top of the head. The eyes are very large with a yellow iris and brown circumference. There are two dorsal fins, the foremost of which consists of twelve rays, and the hindmost of thirty-eight. The gill membrane has seven rays; the pectoral fin thirteen; the ventral seven; the anal forty-one; and the caudal twenty-seven.

The lateral line runs nearly straight from the upper part of the gill-opening, to the middle of the tail, and is furrowed in such a manner as to give it a broad and double appearance. The scales are deciduous from the back; more adhesive to the belly; and frequently stick to the line. There are five or six small warts on a row in the line not far from the gill opening. The ventral fins are shorter than the pectoral, and both are pointed. The vent is nearer the head. The extremity of the tail is even; and the gill-cover is rather peaked behind.

Slender Cod. Gadus tenuis.

With bearded chin, streaked throat, convex tail, and bifid ventral fins.

Is about fifteen inches long. Has brown back and sides; but not so much so below as above. The fins are dark brown, save the ventral, which are whitish and long, ending in red bifid extremities. Eyes of moderate size, and black. Lateral line curved upwards. Mouth and palate furnished with sharp teeth. Tongue smooth. A small cirrhus beneath the chin. Tail roundish. Throat internally streaked with red and purple. Vent nearer the head. The rays in the fins are, Br. 7; V. 2; P. 16; D. 11—54; A. 44; C. 25.

Codling. Gadus Longipes.

With lanceolated body, very long ventral fins; and first ray of the anterior dorsal elongated and flexible.

Length about twenty inches; depth three and a half. The first ray of the first dorsal almost six inches long. Body tapering. Scales besmeared with slime, rendering them slippery and rather obscure. Head sloping, roundish, and smooth. Eyes large and pale. Upper jaw projects. Beneath and within it a distinct movable lip. Lower jaw shuts easily within this lip. The upper lip and lower jaw are furnished with rows of small teeth. Palate and throat also toothed. Tongue large, smooth, and fleshy. Sides of the tongue and inside of the throat smutty, or dotted with black. Mouth capacious; gill-openings ample. A small cirrhus under the chin. Weighs sometimes as heavy as eighteen pounds. The ventral fins are six inches long, bifid, tapering, and reddish.

The lateral line begins over the bronchial opening, and runs nearly parallel with the back. Colour of the back and sides a ruddy brown; of the belly white, tinged with yellowish. Dorsal and anal fins terminate abruptly, and leave a short unoccupied

space between themselves and the tail; the body having at that place become narrow and slender.

This is the *hake* of the New-York fishermen.

Rays, B. 7. V. 2. P. 17. D. 10—54. A. 49. C. 21.

Spotted Cod. Gadus punctatus.

With a black spot in the anterior dorsal fin, black-tipped anal fin, and speckled lateral line. Length, ten inches; depth, nearly three. Figure, that of a fish with a small head, large body, and rather diminutive tail.

Colour of the back and sides, pale brown or whitish; with lines between the scales. Hue of the neck and belly, a dull white, with suffusions of cream colour. Two dorsal fins; of which the foremost has eight or nine rays. It is brown for a short distance above the back; then becomes white; above, it exhibits the form of a black spot; is surmounted by the white tips or summits of the rays.

The second dorsal consists of about forty-seven oblique rays; and reaches almost to the tail. It varies but little from the colour of the back.

The anal fin reaches almost all the way from the vent to the tail. It consists also of about forty-seven rays. It is browner than the contiguous parts. Its extremity or lower margin is black.

The ventral fins are two cleft: and lilach or flesh coloured; second ray is two inches long.

The pectoral fins are thirteen, rayed and roundish. Caudal fin, twenty-three, rayed, tapering at the sides, and nearly even at the end.

Lateral line distinct and peculiar; consisting of a narrow black mark, extending from the upper part of the gill-opening to the tail, and alternating at spaces of half an inch apart, with white dashes about one eighth of an inch long. The black and white of the lateral line make a striking and pretty appearance.

Chin has one small cirrhus. Lips, palate, and throat, armed

with minute sharp teeth. Mouth capacious. Eyes large and whitish. Lower jaw shuts within the upper. Scales soft and very deciduous.

In some individuals there is an imperfect whitish straight fillet under the lateral line. This is one of the rarest of the enumerated species.

Canal Navigation.

The following Report of the Commissioners, appointed by the Legislature to provide for the internal improvement of the State, was laid before the Assembly of New-York, March 8th, 1814. By the publication of this paper, the reader is in possession of all the official documents hitherto offered the Legislature, as the joint Reports of the Board of Commissioners.

We regret that our limits prevent the insertion, in the Register, of the interesting correspondence between the Hon. Gouverneur Morris and Robert Fulton, Esq. on the advantages of the proposed canal, from Lake Erie, to Hudson's River. The same cause has induced us, reluctantly, to omit the publication of Judge Woodward's able Report on this important subject, which was made to the Michigan government, as long ago as January, 1812, but of which a copy has only lately been put into our hands. Judge Woodward is the only writer of consequence that has yet appeared, whose opinions differ materially from those supported by the Commissioners.—*Ed.*

" The Commissioners appointed in and by an act of the Legislature of the state of New-York, to provide for the internal improvement of the state,

" Beg leave to report—

"That in compliance with their official duty, having made the fullest inquiries and investigations in their power, they have appointed an engineer to trace out the course, and estimate the expense of the proposed canal; as, also, to superintend such portion of the whole line as may be approved of by the Legislature. He would probably have arrived before the present hour, had impediments to an intercourse with Great Britain been removed.

"They sought a proper character in that country, preferably to any other, because, from its extensive interior communication by canals, railways, and other expedients, they expect that a more intimate knowledge of useful facts can be obtained there than elsewhere; and because an Englishman, speaking the same languages, and habituated to the same usages and manners, will more easily acquire information among us, and be less liable to imposition.

"On the arrival of the engineer, the commissioners will immediately direct such surveys to be made as may be necessary, in order to ascertain the exact line of the canal from lake Erie to the Hudson; and when this work is completed, the estimates of the engineer shall, as soon as possible, be laid before the Legislature, who will then be able to form such a decision as will best promote the prosperity of the state.

"The commissioners have, in the mean time, caused further investigations to be made, and would not have suspended the surveys, as they did during the last summer, but for military operations, which are not favourable to internal improvement. They have, however, the satisfaction to state, that every examination tends to show, not only the practicability, but the facility, of his enterprise; so far as the term facility can reasonably be applied to a work of such magnitude. They add with much pleasure, that it will not be difficult to extend this communication to the fertile vales watered by the Susquehannah and its wide-spreading branches. Hence they presume, that the public spirit which has always characterized Pennsylvania, will, at a proper time, induce her to coöperate. It may, indeed, be objected, that, to facilitate the intercourse of a commercial rival may be of more comparative loss than positive advantage. But far be such jea-

lousies from the councils of New-York: Marked by nature for greatness, and strong in the consciousness of intrinsic strength, she will always feel that nobleness of soul which would rather accelerate than retard her neighbour's prosperity.

"The commissioners cannot quit this branch of the subject, without stepping a little out of the road in which they ought strictly to walk, for the purpose of expressing their belief, that the communication long since contemplated, between Lake Champlain and Hudson's River, may easily be effected; and thus another of those great avenues be opened, which Providence has so well prepared, that little more is left for the state than merely to will the possession of wealth and power.

"The commissioners have, also, conformably to the powers conferred on them, applied for and obtained grants of land, a schedule whereof is annexed to this report. It would be improper not to acknowledge the liberality of the grantors; but it would be doing injustice to their intelligence, should it be doubted, that a prudent regard to their own interest had its proper share in their determinations. The clear-sighted perception of mankind, respecting matters which affect their property, opened to their view the benefits which they must derive from this extensive inland communication. They, as a part, see and feel what the state, as a whole, must acquire by it; and the solidity of their opinion is the less to be questioned, as the light, in coming to their mental vision, has neither been intercepted by the opacity of dull conception, nor refracted by passing through mediums of misrepresentation.

"The value of these lands will increase by every year of approaching settlement, and every avenue of making new ones. We may, therefore, safely calculate, that in the course of twenty or thirty years, the proceeds of these lands will reimburse to the state no small portion of the expense it may incur by completing the whole line of the proposed canal; and here we must remind gentlemen of what has frequently occurred to their own reflection, that although twenty or thirty years be a large portion of

individual existence, they form but a short period of national duration.

"The commissioners have also performed the duty of attempting a loan in Europe, conformably to the terms, and within the limits, prescribed. They have reason to believe, that their efforts would have been crowned with success, had not the declaration of war been nearly simultaneous with the grant of authority to make a loan. The attempt having failed, no farther measures have been adopted in relation to this object.

"The commissioners having thus rapidly recited facts, which it is their duty to communicate, would be wanting to the public interest, did they not notice attempts to excite opposition to the work committed to their charge. They have examined in their preceding reports the reasons advanced by its opposers, and would endeavour to answer other reasons, if any such they could hear of. In the face of incontrovertible facts the supposed superiority of what is called the natural communication, by Lake Ontario, has been strongly insisted on, and of late the prodigious advantage of carrying on the internal trade of America, through sea-ports of the St. Lawrence was ostentatiously displayed to prove, that a canal through the Western District of New-York is an idle project.

"These gentlemen could not indeed deny, that there is some risk in navigating the Lake, and some difficulty in descending the river; but neither the risk nor the difficulty, nor both combined, are considered as serious obstacles. To men of such sanguine temper, it is useless to observe, that this communication would be much more expensive than the one contemplated, and that it is closed from November to May by the rigid laws of nature; but what are the laws of nature to gentlemen enamoured with their own conceptions? Disdaining to consider the actual state of things, whenever map-makers trace a stream, they find a military and commercial highway. Should there be a want of water, it is supplied by their depth of intellect; should the surface be covered with ice, it is thawed by their warmth of imagination. To contend with such men is no easy task, for they make

facts as they go along, and reason they disclaim; insisting, that whatsoever they think proper to approve of is sublime; whatsoever they think proper to dislike is absurd. From these decrees, pronounced with an air of censorial gravity, and the contemptuous smile of superior intelligence, they admit of no appeal. Far from imitating them, the commissioners will not have the hardihood to question their sagacity, neither will they, after industriously applying the share of common sense allotted to them by the Divine Goodness, to the object of their appointment, pretend, even on that subject, to vie with gentlemen whose privilege it is to understand, and whose prerogative to decide, according to the inverse proportion of their knowledge. With all due deference, nevertheless, to such ethereal minds, they are constrained, by stubborn habit, to adhere to the opinion of intelligent professional men. And here the commissioners beg leave to remark, that they are much misunderstood, when it is supposed, that they recommend, *exclusively*, a canal descending, according to the level of the country, like an inclined plane. On the contrary, their project embraces the system of locks as well as the other, and their opinion is, that the operation must be regulated by the nature of the country, taking into view the diminution of expense, and the shortening of distance. And they beg leave to call to the recollection of the Legislature the decided opinion of Mr. William Weston, one of the most eminent civil engineers in Europe, who was formerly employed by the Inland Lock Navigation Company of this state, and who is perfectly acquainted with the country. In a letter to one of the commissioners, he says, 'Should your *noble* but *stupendous* plan of uniting Lake Erie with the Hudson, be carried into effect, you have to fear no *rivalry*. The commerce of the immense extent of country, bordering on the upper lakes, is your's forever, and to such an incalculable amount as would baffle all conjecture to conceive. Its execution would confer immortal honour on the projectors and supporters, and would, in its eventual consequences, render New-York the greatest commercial emporium in the world, with perhaps the exception, at some dis-

tant day, of New-Orleans, or some other *depot* at the mouth of the majestic Mississippi. From your perspicuous topographical description, and neat plan and profile of the route of the contemplated canal, I entertain little doubt of the *practicability* of the measure. Perhaps this is the only question which the Legislature should be particularly anxious to have resolved. The *expense*, be *it* what it may, is no object when compared with the incalculable benefits arising therefrom, though, doubtless, it will deserve attention, that the money granted liberally be wisely and economically expended.'

"All which is humbly submitted."

Further Accounts of the Public Institutions of New-York.

In order to render the account of the different literary and humane institutions which add so much to the character of New-York more ample and satisfactory, and for the purpose of making the Register the vehicle of such information, we here insert the following brief notices of the Humane Society, the New-York Lying-in Hospital, and the New-York City Dispensary, institutions whose importance and salutary influence have been long known and duly appreciated.

Sketch of the Origin and Progress of the Humane Society of the City of New-York.

THERE is, perhaps, no class of objects more deserving of the exercise of beneficence than that of *destitute debtors in prison.* However politicians may differ as to the general expediency of imprisonment for debt, the propriety of relieving those who may become the subjects of it cannot be doubted. Even on the principle of imprisonment being a justifiable punishment of the debtor, most certainly a confinement that leaves him exposed, (beside

the unavoidable evils of his situation) to the sufferings of cold and hunger, and the consequent hazard of his life, infringes that fundamental axiom in legislation, that the punishment of an offence should always be in proportion to the degree of it.

It is, indeed, a subject worthy consideration in what mode this relief is to be administered; whether from the purse of the creditor, or from that of the state. But from the discussion of this question we are precluded. The framers of the constitution, and the successive legislatures of this state, have made no provision whatever for this case.

To supply this defect, on the 26th of January, 1787, a number of respectable citizens formed themselves into an association under the name of a "*Society for the Relief of Distressed Debtors.*"

Their objects were two-fold:

1. To administer to the comfort of prisoners, by providing food, fuel, clothing, and other necessaries of life.

2. To procure the liberation of such as were confined for small sums, and were of meritorious conduct, by discharging their debts.

To enable them efficiently to prosecute the undertaking, the association depended on the coöperation of the public at large. They were not disappointed. By means of donations in articles of food and clothing, and in money from charitable individuals, they were made the instruments of contributing a speedy and welcome, though, at first, but limited relief to the necessities of the debtor.

The utility of the institution was rendered more and more manifest by the increasing calls on its compassion. These, however, becoming disproportionate to its means, it was obliged to select from among its modes of relief those which would be most productive of solid benefits, and to restrict its appropriations to such articles as were most susceptible of caution in the distribution. To this they were moreover prompted by the many frauds that soon began to take place in the system which had hitherto prevailed.

While the supporters of this institution were thus administering to the wants of the debtor, they were not unmindful of their duty to endeavour to obtain legislative interference in his behalf, and, at an early period, they directed their attention to procuring such alterations in the system of our laws as experience had convinced them was most proper. The case of persons imprisoned for *small sums*, who composed the greater part of the whole number of prisoners, was one for which they particularly desired legislative provision.

In pursuance of this system of improvement they, in the year 1788, appointed a committee, to prepare a memorial to the legislature of the state on this subject.

This memorial was taken into consideration by the legislature, and, in the session of 1788—9, a law was enacted, by which debtors imprisoned for a less sum than twenty-five dollars are liberated after a confinement of thirty days. The best proof of the policy of this law is its continuance to the present day.

As connected with the comfort of the prisoners, the society could not avoid observing the irregularities in the jail, occasioned by the admission into it of spirituous liquors, a circumstance which had been mentioned in the memorial, and, accordingly, endeavoured to remedy the evil. Several minor regulations proving ineffectual, an application was made in 1791, to the legislature, and a law was thereupon passed, by which it was declared, "That henceforward no spirituous liquors should, upon any pretence whatever, be sold within the jail of the city and county of New-York, nor should any kind, except table beer or cider, be brought into it for the use of any prisoner, unless with the certificate of a physician that the same is necessary for his health; and it is made the duty of the sheriff to cause the said law to be observed, under the penalty of 250 dollars.

The society continued its operations, supported solely by the casual bounty of individuals, which fortunately kept pace with the increasing demands on its charity. In 1791, seventy-one persons were relieved by it, and several debtors were discharged.

A committee for the visitation of the jail was now appointed,

to whose particular care the prisoners were intrusted, and nothing was neglected that could administer to their comfort and health, or preserve the prison in a state of cleanliness. At the instance of the society, the corporation of the city provided wholesome water for the prisoners, and the attendance of a physician on such as were sick.

For a number of succeeding years no change occurred in its character or proceedings.

In 1794 one hundred and eight persons were relieved. In 1796 one hundred and twenty-six. In 1799 one hundred and fifty-four.

In 1802 two hundred persons were relieved.

Among the debtors in prison are generally some who are entitled by law to be discharged, but whose confinement is prolonged from ignorance of their rights, or inability to employ legal aid to maintain them. The society, in 1801, undertook to remedy the evils arising from this circumstance, by appointing a counsellor, to whom the causes of such persons were referred, as were reported from time to time by the visiting committee.

In 1802 an alteration took place in the mode of furnishing sustenance to the prisoners, which had hitherto been by distributing among them unprepared articles of food. But, as the prisoners were often tempted to exchange their allowance for spirituous liquors, Gen. M. Clarkson and Dr. D. Hosack were appointed a committee to devise and report a system more economical and less liable to abuse. Upon their report, which was adopted, the society resolved to provide a house in the vicinity of the jail, where the provisions might be cooked and prepared under the superintendance of a matron, and the prisoners thereby supplied with soup and such other articles of diet as are used in institutions of a similar kind in Europe. It was also proposed to extend the plan, so as, on occasions of public calamity, to furnish soup at a reduced price to the poor of the city in general. Experience has fully sanctioned the wisdom of this plan.

About this time, on application to the corporation of this city, that honourable body generously gave the society, beside the sum

of six hundred dollars, the lot of ground in Tryon-street on which the present Soup House is erected.

In 1803, the society, in consequence of the enlargement of its plan, changed its name to that of the Humane Society of the City of New-York.

In imitation of the Royal Humane Society of London, the society, in the year 1806, resolved to devote a portion of its care to the resuscitation of persons apparently dead from drowning; to which its attention was invited by a communication from that institution, exhibiting the very great success with which their exertions had been accompanied. Several sets of apparatus were accordingly provided for this purpose, and physicians appointed to take charge of them, and lend the requisite medical aid. Certain plain and brief directions to be pursued in cases of this kind were also prepared and published in the papers of this city.* The additional expenses attending this extension of the original plan of the society, induced them to seek a dependence less precarious and uncertain than occasional donations, and accordingly the mode of permanent annual subscriptions was now proposed and adopted.

In 1810 five hundred and fourteen persons were relieved. In 1811 five hundred and thirty-six.

In the present year (1814) an application was made for an act of incorporation, which the legislature was pleased to grant.

The charity of the society is now divided into the following branches:

1. The support and clothing of debtors in prison, and, as connected with the former, the maintenance of a soup-house establishment.

2. The liberation of such debtors as are by law entitled to be discharged, and of such as are confined for small sums, and are peculiarly deserving of assistance.

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* See American Med. and Philos. Register, vol. I.

3. The distribution of soup to the poor in general, especially in cases of general public calamity.

4. The resuscitation of persons apparantly dead from drowning.

In addition to the above it may be observed, that a favourite object of the society is to discourage the practice of street begging, so disgraceful to a well-regulated city. The cheerfulness with which the community has listened to applications for aid exhibits the sense entertained of its services, and demonstrates their utility.

"Although the *imprisoned debtor* has not yet met with public provision for his support, this circumstance is to be attributed to the amelioration of his condition, effected by the charitable interposition of this institution. But it is earnestly hoped that the present partial support which is furnished by the Humane Society, will not prevent that permanent legislative provision which the occasion so loudly demands.

Sketch of the New-York Lying-in Hospital.

The object of this institution is to afford an asylum to women in a state of pregnancy, who are destitute of the means of support, and who are unable to procure the necessary medical assistance and nursing during the period of their confinement.

The poor constitute an important portion of almost every large community; and, consequently, have a powerful claim upon the assistance of the wealthy. At all times there are many persons of the description just mentioned, as the especial objects of this charity; and though individual liberality in many instances had been manifested to obviate and remedy the evils under which they laboured, yet it was not until 1798, that an attempt was made to provide a suitable establishment for their reception and relief. The dreadful mortality which accompanied the yellow fever, as it prevailed in this city, in the summer of this year, and the

great distress consequent thereon, operated with peculiar severity upon the labouring poor; and many women being bereft of their husbands, were rendered wretched under the accumulated evils of grief and poverty.

As New-York, though already preëminently distinguished for its charitable institutions, did not afford any provision for this class of the poor, the present occasion was deemed proper to project an establishment for this purpose. Accordingly, in the ensuing October, a subscription was set on foot, by Dr. David Hosack, which was patronized by many of the most respectable citizens of this city, and the sum of nearly five thousand dollars collected. The laudable designs of the association were immediately carried into effect, an appropriate building being procured for the charity in Cedar-street, where they continued in operation for some time.

The committee appointed to draft a constitution for the government of the society consisted of Thomas Pearsall, sen., Robert Lenox, Dr. T. S. Robertson, Henry Remsen, and Dr. David Hosack, and among other liberal provisions which it made we find the following: Every person subscribing the sum of twenty dollars shall be privileged to recommend a patient to the Lying-in Hospital, if approved of by the visiting committee.

It being afterwards ascertained that the interest arising from the society's funds, was by no means sufficient to meet the expenses which a separate institution demanded, in 1801 an agreement was entered into between the New-York Hospital and the governors of the Lying-in Hospital, by which the interest of the then existing funds of the latter were to be paid to the use of the former institution, on condition that a Lying-in ward should be established; and a suitable ward for that purpose was accordingly fitted up and opened for the reception of patients, the express objects of the Lying-in Hospital.

Since the above period the Lying-in Hospital has carried into execution its humane and benevolent plan of affording relief to destitute females at the apartments which they have provided in the New-York Hospital: and the charity which it has thus dis-

pensed while it will be admitted that it has been directed to objects who of all others have a particular claim to attention, so must it also be allowed to be most extensively diffused. In 1799 an act to incorporate the Lying-in Hospital was granted by the state legislature.

By bequests, donations, the interests of the society's fund, and other appropriations which are constantly augmenting their resources it is ardently hoped, and believed, that the time is not far distant when the governors of the Lying-in Hospital will be enabled to erect a commodious and separate establishment for the better accomplishment of their praiseworthy undertaking, and thus add another to the many charitable institutions of this city, which announce so decidedly, and so favourably, the humanity of its inhabitants.

Officers of the New-York Lying-in Hospital, elected September, 1813.

Cornelius Ray, President.
Dr. Anthon, Vice-President.
Frederick Depeyster, Treasurer.
Peter Augustus Jay, Secretary.

Physicians.

Dr. Post. Dr. W. Moore.
Dr. Hosack. Dr. Hamersley.

Sketch of the New-York City Dispensary.

The first attempt for the purpose of instituting the City Dispensary of New-York, was made on the 4th of January, 1791. On that day a number of the most respectable citizens of this city were convened together at the city hall in order to devise a method by which that class of our inhabitants who were suffering under the aggravated calamity of want and sickness might be relieved of their sufferings by the proper administration of medical aid. The Medical Society of the city of New-York, at the head of which presided the late distinguished Dr. John Bard,* fully sensible of the great advantages that would arise from such an institution, were also as a body particularly solicitous for its establishment; and at the same time materially contributed to the accomplishment of the projected plan. A constitution for the government of the association being agreed to, the late Hon. *Isaac Roosevelt Esq.* was chosen president, and Dr. Richard Bayley and Dr. Samuel Bard elected as senior physicians. Beside these physicians, twelve other members of the Medical Society were chosen by the Dispensary, to afford professional relief to the objects of its charity residing in different districts of the city.

The liberal and humane motives by which the patrons of the City Dispensary were actuated will be best seen by the following paragraph, forming the first section of their constitution, as amended and adopted on the 8th of February, 1791. "Every person who shall pay annually into the hands of the treasurer two dollars shall be a member of this institution, and be entitled to have two patients at one time on the Dispensary list, and for every two dollars and a half, which shall be annually paid by any subscriber over and above five dollars per annum, such sub-

* Vide the life of Dr. John Bard; Register, vol. 1.

scriber shall be entitled to have one other patient on the Dispensary list, and every subscriber who shall subscribe and pay fifty dollars shall be a member for life, and be entitled to have two patients always on the list."

The office of president having become vacant by the death of Isaac Roosevelt, Esq. the Rev. John Rodgers, D. D. was elected to fill that station in October, 1794. The exertions of Dr. Rodgers in promoting the interests of the Dispensary, as well as those of other humane establishments in this city, reflect lasting credit on his memory:* and as a mark of the confidence reposed in his character, it may here be stated that he was annually chosen as president of the institution until his resignation, in July, 1810, when the present officer, Gen. Matthew Clarkson, was elected his successor.

In April, 1805, an act to incorporate the contributors to the New-York Dispensary passed the legislature of this state.

From the report of the institution for this year, bearing date December 24th, 1795, it appears that the whole number of patients to whom it afforded relief during that time was 536. The epidemics with which the city had been visited in 1795, 1797, and 1798, having deprived many families of the means of support, greatly increased the number of applicants for the benefits of the Dispensary; the same may be said of the additional distress among the poor which occurred on account of the prevalence of the yellow fever in 1803. The demands made upon this charity having from these and other causes increased far beyond expectation, and the funds of the establishment proving inadequate to its numerous wants, necessarily called the attention of the board of trustees to the devising of other means, better calculated to fulfil the express intentions of their organization, and to enhance the utility and importance of their association. A committee was accordingly appointed to consider what alterations might be made in the management of the concerns of the Dispen-

* Vide Memoirs of the Rev. Dr. Rodgers, by Dr. Miller.

sary in order to extend "the benefits thereof, more generally to all descriptions of poor and suffering citizens." Among other alterations they recommended, that the city be divided into a certain number of districts; instead of the duties of the institution being confined solely to the resident physician of the establishment: that as at their first organization, that for each district a physician be appointed whose duty it should be to give the requisite attention to all persons of the district who were proper objects of the Dispensary.

The report of the committee being agreed to, the city was divided into four districts, and four physicians appointed to take charge of all patients therein: and an apothecary was also chosen, for the purpose of preparing and distributing such medicines as were directed by the physicians.

The same year, 1805, a union was effected between the kine pock institution and the City Dispensary. The kine pock institution was established in New-York in January, 1802, for the purpose of substituting the cow pock inoculation in the place of the small pox; more particularly among the poor, and for preserving a constant supply of genuine matter.* The trustees of

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* *The New-York Institution for the inoculation of the kine pock*, organized on the 11th of January, 1802, most materially contributed to the promotion of the important objects for which it was instituted. Previously to this period, however, the benefits of vaccination were experienced and acknowledged in this city and other places in the United States. To that learned and most distinguished physician, Dr. GEORGE PEARSON, of St. George Hospital, London, to whom so much is due for the introduction of vaccination in Great Britain, the American republic is also largely indebted for his great exertions in making known the benefits of this discovery in this country. In order that the vaccine disease might be substituted for the small pox, Dr. Pearson transmitted, in a letter to Dr. Hosack, a thread impregnated with the matter of the vaccine virus: and in a letter to Dr. Hosack, toward the close of 1798, and which accompanied a copy of his "*Inquiry concerning the history of the cow-pox, principally with a view to supersede and extinguish the small pox*," published in London, November, 1797, he says; "I now send you my proof sheets of a new work on a subject which will much surprise you, and which promises to supersede that most loathsome disease the small pox. I wish you to inquire whether such a disease as the cow pox exists in America and give me advice of it. I send you this early information that you may avail yourself of it."

the City Dispensary, believing that the Dispensary might offer more and better opportunities for extending the vaccine inoculation than even the society so laudably instituted for this particular purpose, resolved, that should the contributors to the kine pock institution be of the same opinion, that the City Dispensary would pursue, with the same attention and fidelity, the objects of the vaccine establishment; and that the contributors to the last-mentioned association should retain the same privileges of recommending patients for inoculation that they originally possessed. Upon these honourable and equable terms, the kine pock establishment now constitutes one of the departments of the City Dispensary. The first physician appointed to vaccinate for the Dispensary under these regulations was Dr. Valentine Seaman.

According to the annual report, dated January, 1806, no less than 1,223 patients enjoyed the advantage of the City Dispensary, beside those who had received vaccine inoculation gratis. In the year 1808, the number of patients who enjoyed the advantage of the Dispensary was 1,340:—in 1811 the number was 1,446: the trustees also stated that in addition to these patients 1,016 had been vaccinated at their office since the first of January, 1811, gratis, and "that in every instance the kine pock has proved a perfect security against the small pox." "They think proper further to state that, notwithstanding every person applying at their office is vaccinated gratis, without any questions being asked, yet the small pox is suffered to spread—160 persons have died with the latter disease in this city during the year 1811." The following year 1,658 persons were admitted to the benefits of this institution; and in 1813, 2,110, exclusively of those who were vaccinated.

The objects of charity claiming the attention of the City Dispensary having of late greatly multiplied, the trustees have found it necessary to enlarge the plan of the institution: for this purpose they have divided the city into *six* districts, and have appointed a physician to each; and in order to secure to the sick the benefits of additional advice, they have appointed six consulting phy-

sicians, who may be called on by the attending physicians in all difficult or dangerous cases.

The corporation of New-York, with their characteristic liberality, in 1810, granted a lot of ground in Tryon-street as a convenient site for the Dispensary; and when we consider that the cause of humanity cannot be more truly served than by contributing to the relief of those who are the objects of this charity, it is hoped that at no distant period the trustees will be enabled to erect a spacious and commodious building for their purpose.

Literary and Philosophical Society of New-York.

Organized and Incorporated in 1814.

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The Literary and Philosophical Society of New-York have committed to the press the 1st vol. of their Transactions, which will shortly appear, in 4to.

Chemical Laboratory in New-York.

It is with great satisfaction we state, that a Chemical Laboratory has been recently established in the vicinity of this city. This institution is well fitted up, is on a scale of considerable extent, and is under the direction of one eminently qualified for the station, Mr. Henry Dreyer, operating chemist, a gentleman who to the information derived from books adds the more useful and certain knowledge arising from practical observation. In the present state of our country we cannot but consider this establishment as highly important.

American Edition of Bell on the Venereal.

Messrs. Backus of Albany have issued proposals for publishing a new edition of Benjamin Bell's Treatise on Gonorrhœa Virulenta, and Lues Venerea. This edition will be adapted to the present state of practice in these diseases, and be materially improved and augmented by *notes*, furnished by the American editors, Doctors *Lon* and *Beck*, of Albany. Bell's Treatise may be pronounced superior to any other hitherto published on the same subject, and when enriched, as is now proposed, with the valuable observations of the American editors, cannot fail to receive the attention of every practitioner who directs his attention to the diseases of which it treats.

Dr. Currie's Work on Fevers.

Dr. William Currie, of Philadelphia, will shortly publish, in one vol. 8vo., A Synopsis or General View of the most noted Theories or Doctrines of Diseases that have been taught at different periods. In this Synopsis the author will include a critical review of the Theories of the late Doctors Cullen, Brown, Darwin, and Rush, and of that of Dr. Gregory, the present professor of the Practice of Physic in the University of Edinburgh.

Bristed's Lectures on Law, &c.

John Bristed, Esq. has lately published, in a closely printed pamphlet of forty pages, *A Prospectus of a Series of Courses of Lectures on Law, to be delivered by John Bristed, Counsellor of Law.*

We have long been of opinion with regard to the profession of the law, as well as the other learned professions, that courses of lectures on the several subjects it embraces would afford the best means of instruction to the student; for at the same time that they are calculated to secure his attention they give him regular habits of thought and arrangement, and greatly abridge the labour of study. Under these impressions it gives us great pleasure to learn, that so extensive a system of instruction as that announced in the present prospectus is about to be undertaken by one in all respects so well qualified for the task.

Additions to the Library of the New-York Hospital.

The Library of the New-York Hospital has, within the last year, been most materially augmented. Among the very many valuable additions that have been made to it by the public spirited governors of the institution, may be enumerated the following scarce and important works, on medical science and on natural history. No other library in this country equals that of the hospital in the number and importance of its collections on this branch of science.

Anatomy of the Horse, folio, plates; Kestneri, Bibliotheca Medica. Zinn. Descriptio Oculi Humani, 4to. Ruyschii Opera Anat. Med. Chirurgica, 4to. Historia Morborum Halleri, Valsalva de Aure Humani, 4to. Baldingeri Opuscula Medica, 5 vols. Lieutaud, Historia Anatom. Medica, 2 vol. 4to., Cotunnius, de Aqueductibres. Bellini, de Motu Cordis et de Motu Bilis, 4to. Physiologiæ de Lewenhoeck, 4to. Sanctorini Anatomica, 4to; Fracastorius, Berkenhout, Plouquet, Morton, and Carthesier's Writings, &c. &c.

Sybilla Merian's Metamorphosis Insectorum Surinamensium, imp. folio, rare, original ed. Monro's Structure and Physiology of Fishes, folio; Edward's Gleanings in Natural History, orig. ed. 4to. 7 vols. Pennant's History of British Quadrupeds, 2 vols. 4to. Pennant's British Zoölogy, 4 vols. 8vo. Donovan's History of British Insects, 10 vols. 8vo. Donovan's History of British fishes, 3 vols. 8vo. Pennant's Genera of Birds, 4to. Pennant's Indian Zoölogy, 4to. Ellis's History of Corallines, 4to. Ellis's History of Zoöphytes, 4to. Decolta's British Conchology, 4to. Lacepedes' History of Oviparous Quadrupeds, 4 vols. 8vo. Thornton's Illustrations of the Sexual System of Linnæus, 4 vols. imp. folio. Michaux's History of the Forest Trees of North America, 3 vols. Shaw's works on Natural History.

Muhlenberg's Botanical Catalogue.

The Rev. Henry Muhlenberg, D. D. of Lancaster, has lately published *Catalogus Plantarum Americæ Septentrionalis huc usque cognitarum Indigenarum et Circurum: or Catalogue of the hitherto known native and naturalized plants of North America, arranged according to the sexual system of Linnæus.* Dr. Muhlenberg's publication may be considered among the most important contributions that have yet been made to the stock of botanical information so far as it concerns the vegetable productions of North America. As a work of labour and research it has rarely been surpassed; and in the important requisite, accuracy, it has no superior. The learned and excellent author has proved that the confidence reposed in his abilities has not been misplaced, and has fully justified the high expectations of his warmest scientific friends. This Catalogue contains eight hundred and sixty-three genera.

It is hoped that Dr. Muhlenberg will soon be enabled to offer to the lovers of botany his long promised work, "*Descriptio Uberior Plantarum Lancastriensium.*"

Massachusetts Historical Society.

The Historical Society of Massachusetts have added to their first series of collections two other volumes, making the eleventh and twelfth in the whole. The present volumes will in no way diminish the reputation the society has acquired by its former publications; and we take pleasure in stating that they contain many historical details highly interesting to other than the New England States.

Bruce's Mineralogical Journal.

In the Register for July, 1810, we announced the appearance of the first number of the American Mineralogical Journal, conducted by Archibald Bruce, M. D. &c. &c. The first volume of the Mineralogical Journal is now completed; among the papers which it includes, we find communications from Drs. Mitchill, Akerly, Meade, and Arnell; Messrs. Godon, Wistar, Barton, Cutbush, Conrad, Chilton, Smith, and Gilmour; Professors Cooper, Silliman, Griscom, Col. Gibbs, and the editor, Dr. Bruce.

In a department of science where, in this country, so little has been accomplished, and where there remains so much to be done, we cannot but wish for the more frequent appearance of the numbers of the American Mineralogical Journal, and that the distinguished mineralogist who conducts the work would more frequently favour us with contributions from his own rich treasures.

Mease's Archives of Useful Knowledge.

Dr. Mease, of Philadelphia, we are informed, terminates with the third volume, the publication of his interesting journal, the *Archives of Useful Knowledge*, a work devoted chiefly to agriculture and domestic economy.

Michaux's new Botanical Work.

F. A. Michaux, M. D. the enterprising traveller, and son of A. Michaux, M. D. has just completed at Paris a publication on the woods of North America, the materials for which he collected during his second tour through the United States made in the year 1806, 7, and 8. M. Michaux has furnished ample details concerning the botanical characters of the trees he has noticed, but has more particularly dwelt upon their importance in commerce and the arts. The work is included in three vols. royal octavo, enriched with numerous plates.

Dorsey's Elements of Surgery.

Professor John Syng Dorsey, M. D. of Philadelphia, has completed the publication of the *Elements of Surgery* for the use of students, with plates: in two volumes, 8vo. As an elementary work, this performance is calculated to be extensively useful: its value is much enhanced by its embracing the most material improvements in surgery made by the American Desault, Professor Physick.

James's Edition of Burn's Midwifery.

Dr. James, Professor of Midwifery in the University of Pennsylvania has published a new and enlarged edition of Burn's Principles of Midwifery. This edition of Burn is the third that has appeared in this country: the first attempt at improvement upon the original work was made in New-York; the second edition was augmented by, and issued under the superintendence of, Dr. Chapman, now professor of materia medica, and deservedly met with a rapid sale. The chief mass of the valuable notes in Dr. Chapman's edition of the author's production have, by permission, been retained in this of Dr. James. The additions now made to these Principles will

be found to be altogether of a practical nature, and are intended solely to explain or illustrate the text. With great justice it may be added that Dr. James has materially enhanced the value of the original work.

Barton's Memoirs of Rittenhouse.

It was one of the intentions of the editors, which they announced about two years ago, to publish in the Register a Biographical Sketch of the late David Rittenhouse, LL. D. F. R. S.; but they relinquished their design soon after, being informed that a work of some extent, having for its object a full delineation of the character of the American philosopher, and embracing in detail the particulars of his life and education, was in preparation by one particularly qualified for the undertaking.

We have perused the present volume with attention, and we are happy that Rittenhouse has found such a biographer. Rittenhouse, by general consent, is now considered as second to no philosopher of the time in which he flourished: but it is not alone as a self-taught genius of the first order that we contemplate his character: it is not merely for his contributions, great as they have been, to the stock of human knowledge, and much as they have enlarged our horizon, that he commands our admiration: in all the relationships of public and private life, as a member of domestic society, and as the citizen of an enlightened republic, he may serve as an excellent model and example for the instruction of human nature. Mr. B. has not merely presented us with the life of Rittenhouse. "This work is designed (says the author, preface, p. 1.) to comprehend memoirs, not only of Rittenhouse personally, but of several literary, scientific, and other public institutions, as well as of many eminent men, with which his individual history and the annals of his time were in various ways associated: it is presumed that the slight sketches which have been taken in passing along, will neither prove foreign to the nature of the present undertaking, nor uninteresting in themselves. As a citizen of Pennsylvania; as an inestimable public and pri-

vate character, as a distinguished son of science, of great probity and extensive usefulness in society; in all these points of view the History of Dr. Rittenhouse may be contemplated as holding a relationship with almost every object connected with science and the arts, in his day, that could in any wise contribute to the well being of mankind in general, and his native country in particular. Conspicuous and eminently meritorious as he was, yet an insulated account of his talents, his virtues, and his personal services—a bare specification of such qualities and merits as he possessed, abstracted from a due consideration of the state of society and circumstances resulting from it, taken in connexion with them, during the same period—would not be equally intelligible and instructive; and, consequently, must prove less useful. For these reasons, the memorialist has pursued that course which he conceives to be perfectly congenial with the main design of the work, as best calculated to promote its general usefulness, and most suitably adapted to render it interesting, even to those who read for amusement solely."

Mr. Barton, in conformity to this plan, has embodied in the memoirs of Rittenhouse a large amount of interesting matter illustrative of the progress of literature and science, more especially in this country: and in thus doing he has rescued many highly important facts from oblivion, and preserved them for the benefit of future times. Among the papers contained in the appendix to these memoirs is the celebrated Oration of Rittenhouse delivered before the American Philosophical Society, on the 24th Feb. 1775.

Barton's New Biographical Work.

William Barton, Esq. the author of the memoirs of Rittenhouse, contemplates the publication of an original work on *American Biography*, to be comprised in several volumes large 8vo.

Haygarth on Acute Rheumatism.

The venerable and experienced Dr. Haygarth has recently published some interesting observations on the utility of cinchona in the treatment of acute rheumatism. Cinchona was conjectured by Sydenham to be useful in gout. Dr. Haygarth recommends the bark to be given after the manner of Morton, Hulse and Fothergill, from the commencement of the disorder; the primæ viæ having been previously emptied by means of antimonial medicines.

Duncan on Phthisis Pulmonalis.

A volume of uncommon interest on the above disease has lately been presented to the medical world by Dr. Duncan, sen. of Edinburgh. We have not room for any abstract of the contents of the work.

With regard to the digitalis, in favour of which so much has been said by its advocates, Dr. Duncan speaks in language which it would be well for the interests of humanity were it fully impressed upon the minds of those who so liberally use this article of the materia medica. After a series of experiments upon this remedy we were convinced that its value had been overrated, and its properties in many instances wholly misunderstood. And for many years past we have uniformly maintained that its indiscriminate use in pulmonary diseases is the constant source of the most serious evils.* Let those who overlook the different stages of phthisis pulmonalis, and, to the exclusion of other means, still madly prescribe the digitalis, reflect upon the mischief they have occasioned, if nature has not denied to them the powers of cogitation; and, if their senses be not too much obtunded, let them derive wisdom from the perusal of Dr. Duncan's instructive pages.

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* See Delile's Inaugural Dissertation on the Pulmonary Consumption, *New-York*, 1807.

Medico-Chirurgical Transactions of London.

In the third volume of the work just mentioned we find that Dr. Bostock of Liverpool, has offered some interesting observations on *Diabetes Insipidus*. This disorder, though but seldom noticed, Dr. Bostock is inclined to believe is of more frequent occurrence than is generally imagined. In the case the particulars of which are here related, Dr. Bostock effected a cure by the use of preparations of iron and the warm bath. Dr. Bostock has lately, and with great success, devoted a large portion of his time to the important subject of animal chemistry; and much of the present paper is taken up in his account of chemical experiments made with the urine of diebetic patients.

Ferriar's Medical Histories and Reflections.

Dr. Ferriar of Manchester has lately published a fourth volume of his medical histories and reflections. Like all the other writings of this distinguished philosopher and physician, this volume is richly deserving of attention. With the exception of some few pages, in which are detailed the particulars of a case of schirrus of the pylorus, it is devoted to the consideration of two diseases, dropsy and diabetes. Dr. Ferriar appears to have been solicitous to find a more certain *hydragogue* than any of those now in use; and from the successful results of his own ample experience he now recommends an extract of the elaterium as surpassing every other medicine in the power of removing serous accumulations, and as affording astonishing relief in the dyspnœa arising from hydrothorax and ascites. Pliny, as stated by Dr. Ferriar, though he was not acquainted with the power of the elaterium in dropsical complaints considered it highly valuable, "ad magnos mortalium usus." Dr. Ferriar has briefly related the particulars of twenty cases in which the elaterium was prescribed with various success. Upon its first exhibition to a patient it is nearly as active and as dangerous, if incautiously given, as arsenic.

"The sensible effects of the elaterium are, severe and constant nausea, frequent watery stools, and in considerable doses vomiting. It does not uniformly increase the urine, and for this reason it is generally proper to combine it with more certain diuretics. After continuing the use of the medicine for some days, the patient will sometimes bear a considerable increase of the dose. I have gone to the extent of five or six grains a day in this manner, without producing any inconvenience. But it is always proper to begin with the lowest dose, which is the sixteenth part of a grain of the extract."

The Medical Histories and Reflections are in constant demand, and we have long expected their republication in this country: our wishes, we believe, will shortly be gratified.

Alden's Collection of American Epitaphs and Inscriptions.

In the number of the Register for October last, we noticed the intention of the Rev. Mr. Alden, to continue the publication of his collection of American Biography and History, under the above title. Since that time two additional volumes of his work have made their appearance, and the fourth and fifth, which complete the first pentade, are now in the press. The alteration and extension of the original plan of these Collections, which the author promised in a communication to the public, has been fully carried into effect. "My original design," says he, "was merely to gratify an inclination for acquiring a knowledge of important Chronological, Biographical, and Historical facts, nowhere to be found, except on the mouldering mansions of the venerable dead, and on the face of monuments or corner stones, and other parts of public buildings, equally a prey to the tooth of time, or on such materials, and under such circumstances, as to render them difficult of access.

"At length, having amassed many documents, having enjoyed much satisfaction in contemplating these interesting memorials, and having reflected that every vestige of many of these, together with their depositories will soon be swept away by that

current which nothing can withstand; it occurred, that my Collection, if issued from the press, accompanied with occasional notes, would be acceptable to my fellow-citizens, and at the same time, give publicity to a multitude of facts, which ought not to be buried in oblivion, and preserve in a form more durable than marble or brass, a tribute of gratitude and respect to the memory of many, of whom the world was not worthy.

"That disposition, which induced me to copy valuable inscriptions, has often led me to make inquiries of the aged and intelligent, and to extend my researches into ancient records, private manuscripts, and scarce printed tracts and papers, for facts in American Biography and History. The result has been a fund of materials, from which are drawn the *occasional notes*, making the greater part of this Collection. Whether this novel kind of publication will be deemed of importance sufficient to encourage me to undertake another series, should my life be prolonged, time alone can disclose."

It need scarcely be stated the reverend author has faithfully executed the task he undertook, and that this *Collection* embraces a body of scarce and interesting information, highly deserving the attention of all who are desirous of acquiring an extensive and accurate knowledge of American biography and antiquities. As specimens of the contents of the performance we might easily copy many excellent biographical accounts.

Dr. Pearson on the Bronchial Glands.

George Pearson, M. D. F. R. S. has lately read before the Royal Society a paper *on the colouring matter of the black bronchial glands, and of the black spots of the lungs.*

As has been repeatedly observed, the lungs generally become more dark-coloured proportionably to their age. At sixty or seventy years of life they often appear almost uniformly black, from the number and congeries, or coalescence of the maculæ, points, and lines disseminated immediately under the transparent

pulmonary pleura. After a course of elaborate investigation, for the purpose of confirming the pathology of pulmonary consumption, (see the abstract of Dr. Pearson's experiments on expectorated matter in the Register, vol 1.) Dr. Pearson is disposed to conclude that the black matter, obtained from the bronchial glands and from the lungs, to be animal charcoal in the uncombined state: i. e. not existing as a constituent ingredient of animal organized solids or fluids.

"I mean by the term animal charcoal what is popularly understood. Of course I do not mean pure charcoal. Such a state of this substance cannot here be reasonably expected, either from a consideration of the state of it, as inspired from the atmosphere, or from its necessary impregnation with animal matter during its long residence in the lungs. I imagine no person would hesitate to consider such a coaly substance as the present to be charcoal, if derived from other sources besides the animal economy; it being, as shown by the preceding experiments, a black, tasteless, infusible powder, indissoluble in muriatic acid, nitric acid, and perhaps all common acids, except the sulphuric, affording as large a proportion of charcoal acid as animal and vegetable charcoal which has been exsiccated at the same temperature, and equally resisting fire in close vessels.

"For the purposes of physiology, a few theoretical remarks may, perhaps, be useful. I think the charcoal, in the pulmonary organs, is introduced with the air in breathing. In the air, it is suspended in invisibly small particles, derived from the burning of coal, wood, and other inflammable materials in common life. It is admitted that the oxygen of atmospherical air passes through the pulmonary air vesicles, or cells, into the system of blood-vessels; and it is not improbable that through the same channel, various matters contained in the air may be introduced. But it is highly reasonable to suppose that the particles of charcoal should be retained in the minutest ramifications of the air tubes, or even in the air vesicles, under various circumstances, to produce the coloured appearances on the surface, and in the substance of the lungs, as above described. It must also be con-

sidered, that innumerable absorbent lymphatic vessels take their rise in the bronchial tubes; for the lungs are more richly stored with lymphatic vessels than any other organ, excepting the liver. When I compared the black lines and black net-like figures, many of them pentagonal, on the surface of the lungs, with the plates of the lymphatic vessels by Cruickshank, Mascagni, and Fyffe, I found an exact resemblance; and when I found that these vessels contained charcoal, I judged that it was fair to infer, that the lymphatics of the lungs absorb a variety of very different substances, and especially this coaly matter, which they convey to the bronchial glands, and thus render them of a black or dark-blue colour. Hereafter, among other inquiries, the colour of the large trunks of the lymphatic vessels, just *before* they enter the bronchial glands, and just as they pass out of them, ought to be observed. Also the effect of the charcoal thus conveyed into the thoracic duct, or directly into the blood by the lymphatics from the black glands, is, I presume, worthy of attention."

Bancroft on the Yellow Fever.

The late voluminous performance of Dr. Bancroft, on the yellow fever, has been the means of reviving in England the controversy relative to the specific form and contagious nature of this disease. That learned and distinguished physician Dr. Chisholm has again entered the list of writers in support of the doctrines of contagion; and ably armed as he is, with the weapons derived from his extensive knowledge and experience, we cannot entertain the least doubt as to the issue. We respect Dr. Bancroft for his talents and general erudition, but at the same time cannot withhold the expressions of our disapprobation at his conduct for the gross and illiberal language in which he has thought fit to communicate his sentiments. It would seem to be the opinion of Dr. Bancroft, judging from his conduct, that gross invective and personal abuse may supply the place of well-authenticated fact and legitimate deduction.

The question, is the yellow fever a contagious, and, consequently, imported disease, may be considered as satisfactorily decided in the affirmative. Upon no other rational principle can we account for the non-appearance of this disorder in the United States for several years past, while it has raged with its accustomed violence in the tropical latitudes. The restrictive measures imposed by government on commerce, and our improved system of quarantine regulations have operated as an effectual barrier against the introduction of the pestilence, though the local circumstances of our seaport towns and the temperature of our climate have had their accustomed agency.*

The Port Folio.

Dr. Charles Caldwell, of Philadelphia, has lately become the editor of the Port Folio. The talents and erudition of Dr. Caldwell are well known, and it is confidently hoped that this literary journal will resume the character it originally maintained while conducted by the celebrated *Dennie.*

Officers of the Society for the Promotion of Useful Arts, for 1814.

Simeon De Witt, *President.*
John Tayler, 1*st Vice-President.*
Stephen Van Rensselaer, 2*d Vice-President.*
T. Romeyn Beck, *Recording Secretary.*
Samuel Bard, *Corresponding Sec. Middle District.*
James Low, *do. Eastern Dist.*
Josiah Noyes, *do. Western Dist.*
John W. Francis, *do. Southern Dist.*
Isaac Hutton, *Treasurer.*
Garrit W. Van Schaick, *Senior Counsellor.*

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* See the several quarterly reports on the weather and diseases of New-York.

Counsellors.

Isaac Hutton,	Horatio G. Spafford,
Timothy Clowes,	Edmond C. Genet,
John M. Bradford,	Jacob Green,
Philip S. Van Rensselaer,	John Woodworth.

Observations on the Weather of the City of New-York, for the months of January, February, and March, 1814.

JANUARY.

With the exception of a few days, the thermometrical heat for January was generally at or about 32 degrees of Fah. The coldest day was on the 4th, when the mercury stood at 7 A. M. at 17; at 3 P. M. at 24; and at 7 P. M. at 22. The greatest degree of temperature was on the 17th, and on the 29th. On the former day, the thermometer stood at 7 A. M. at 33; at 3 P. M. at 39; and at 7 P. M. at 36; on the latter day, at 7 A. M. at 36; at 3 P. M. at 39; at 7 P. M. at 38 degrees. Snow fell in considerable quantities on the 9th, 10th, 16th, and 18th. Rain fell on the 24th. The other days of the month were generally clear: wind part of the time northerly.

FEBRUARY.

The weather of this month, both with regard to temperature and the humidity of the atmosphere, was somewhat greater than we are accustomed to experience at this season of the year. The thermometrical heat was repeatedly more than 40 degrees during the whole day. The coldest day was on the 4th, when the mercury stood, at 7 A. M. as low as at 17; at 3 P. M. at 25; at 7 P. M. at 23 degrees.* On

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* At Albany the thermometer, on the 1st of February, was at 7 A. M. two degrees below 0; and on the 4th, at 7 A. M. at 2; at 3 P. M. at 0: and at 7 P. M. at 6. See the Stranger for February 12, 1814, published at Albany.

the 8th, the thermometer stood at 7 A. M. at 36; at 3 P. M. at 45; at 7 P. M. at 38. On the 17th, at 7 A. M. at 40; at 3 P. M. at 45; at 7 P. M. at 44. The remaining days of February were about the temperature last mentioned; sometimes higher. Snow fell on the 2d, 6th, and 14th; rain on the 7th, 9th, 10th, 11th, 17th, 24th, and 25th. Overcast on the 1st, 2d, 3d, 7th, 9th, 13th, 16th, 20th, 22d, and 27th. Wind N. or N. E.

MARCH.

Much more of the severity of winter was experienced in March, than during the preceding month. From the 1st to the 10th, though the weather was clear, the degree of heat indicated by the thermometer was for the most part considerably below the freezing point. From the 10th to the 26th, inclusive, there were many and heavy falls of rain, accompanied with a strong wind from the N. E. On the night of the 26th, considerable rain fell, accompanied with heavy thunder and lightning. The lowest degree of temperature was on the 1st, when the mercury stood at 7 A. M. at 21; at 3 P. M. at 26; and at 7 P. M. at 25. The highest degree of warmth was on the 27th, when the thermometer stood at 7 A. M. at 47; at 3 P. M. at 63; and at 7 P. M. at 56. Snow fell on the 10th, 21st, 23d, and 24th. Wind for the most part northerly.

Quarterly Report of the Diseases of the City of New-York, for the months of January, February, and March, 1814.

In our quarterly report for January, February, and March, we have uniformly noticed the more or less general prevalence of disorders of an inflammatory type, the effect of the weather at this season of the year: diseases of the thoracic viscera and more especially pulmonary consumption have been

attended with their usual mortality; and as observed on a former occasion in a great number of instances "the ordinary inflammatory diseases of the season have exhibited an unusual degree of malignancy." In many cases the inflammatory stage was of comparitively short duration, and has been followed by symptoms strikingly characteristic of the typhoid type. Indeed, typhus fever has appeared with more than ordinary frequency, and, as far as we can learn, has been attended with great mortality. The writer has therefore thought it not improper to devote the present report principally to the consideration of this form of febrile disease.

From the time of Hippocrates to the present day the subject of fever, more than any other disease to which the human frame is liable, has received the attention of physicians. Yet, looking into our obituaries, we find that fever and febrile diseases still constitute the great outlets to human life, and are at this day almost as fatal as they were in the time of Sydenham, who calculated that fevers, properly so called, make up nearly two thirds of the diseases which prove fatal to mankind, and that eight out of nine of all who die are cut off by febrile complaints. However minutely, therefore, we may be acquainted with the symptoms of fever in its various forms and stages; however extensive may be our knowledge of its predisposing and exciting causes, we certainly are very deficient in our acquaintance with the *proximate* cause of fever, or its treatment would be more distinctly defined in its various stages than it appears to be in any of the great practical works that have fallen under our notice. Whence, then, has arisen the variant, and, we may almost say, the *empirical* practice, that fills the pages of the best writers on fevers, and that are even to be found in the truly valuable works of Boerhaave, Cullen, Wilson, Fordyce, and others? We answer; it is in a great degree ascribable to the local views to which

some of those writers have been limited by their own hypotheses, and by which others have become subsequently enslaved.

Boerhaave's exclusive attention to the *humoral pathology* gave him necessarily but a limited and partial view of the nature of fever, and its operations upon the various parts of the animal economy; he, consequently, neglected all those indications in the treatment, that a more extensive view of the *nervous system*, as taken by Hoffman and Cullen, would have pointed out. But his successor Cullen, on the other hand, by avoiding Scylla ran on Charybdis. The nervous system, according to his view, had been too much neglected; but in restoring it to its merited notice, he again, in a great degree, lost sight of all the other parts of the human frame, pronouncing the *humoral pathology* in particular a creation of the imagination, and in its application to practice altogether hypothetical.*

The still more recent writings of Brown, Beddoes, Darwin, Girtanner, Clutterbuck, Rush, and others, have been too successful in spreading these partial views of the human structure, and, consequently, limited pathology of the diseases to which it is liable. Even the learned and elaborate work of Wilson is calculated to diffuse the same erroneous doctrines; nor is the more independent and philosophical Fordyce altogether exempt from this charge, although he professes to be totally guided by facts, regardless of hypotheses. Fever, in the opinion of the writer of these remarks, is a disease of the whole system; it appears no less in all the faculties of the mind than in all the functions of the body; it shows itself in every organ of our frame, and affects every nerve and fibre of our system; the absorbing, the circulating, and excreting

* See preface to his First Lines.

systems of vessels, are all affected by it; it shows itself in all the various fluids of the body as well as in the solids; in a word, it is omnipresent; it has no one pathognomonic symptom, but is constituted by a concourse of symptoms, and these variously combined in the various forms that fever assumes, depending upon the causes from whence it proceeds, and the condition of body in which it occurs. If this view of the subject be correct, it will necessarily lead the physician to more extensive principles of practice; it will lead him, at the bedside of the patient, to pay due regard to the nervous system, and the phenomena it exhibits, and the indications thence arising; but at the same time it will lead him to notice the changes which may be induced in the secretions and excretions, and the circulating mass from whence they proceed. We offer these remarks for the purpose of calling the attention of the reader to the too long neglected pathology of the fluids;* at the same time that we invite the attention of the practitioner to some points of practice, not in our opinion sufficiently attended to in the treatment of fevers, and which the successful treatment of some recent cases of typhus fever have enabled us still further to confirm. It is proper here to remark, that, when speaking of fevers, we have in view the continued type of fevers properly so called, not referring to the phlegmasiæ or other pyrexious diseases; yet, in many instances, the principles we wish to inculcate, and the practical deductions thence arising, will be no less applicable in the *typhoid* state of many of the phlegmasiæ, and other febrile diseases, than they are to the advanced stage of typhus fever itself.

It will be acknowledged, that fever cannot long continue without inducing debility in the heart and arteries, in common

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* See Dyckman, on the Pathology of the Fluids, and the review of the same Dissertation in the present number of the Register.

with all the other parts of the system, and that the sensibility to impressions must be proportionally increased. They are, consequently, predisposed to be more readily acted upon even by the natural stimuli of the system; the heart and vessels are accordingly excited to preternatural frequency, even operated upon by the blood and other fluids of the system in their natural and healthy condition, as we see daily illustrated in the progress of all fevers, and in convalescence from fever: We contend that fever, long continued, not only wastes the power of the solids, rendering them more irritable, but by the derangement in the functions and excretions, perhaps by the action of the blood vessels themselves upon their contents, and especially by the retention of those materials which should have been thrown out of the system as noxious, which in health are constantly ejected, the circulating fluids become changed and vitiated, and thereby become additional sources of irritation to the heart and arteries, whose susceptibility of impression, as we have just observed, is also morbidly increased. From this view of the more irritable state of the circulating system, and the vitiated condition of the fluids, we infer, that unless by some salutary power inherent in the system itself, or by some means suggested by art, the greater irritability of the whole system, and of the heart and arteries in particular, be diminished, or the morbid changes induced in the fluids they circulate be counteracted, these causes of fever, mutually operating upon each other, must increase, and fever be continued until the vital principle itself be totally expended. How far, then, we ask, is the attention of physicians directed to these two cardinal objects, in the treatment of the advanced stage of fevers? How far is their practice calculated either to impart vigour to the system, and thereby to lessen the morbid sensibility of the nervous and moving fibre, or to counteract the septic tendency of the circulating fluids which obtains in most fevers of the continued type?

Are we not hereby led to condemn that indiscriminate and long continued use of the *debilitating evacuants*, usually prescribed at this advanced period of fevers and febrile diseases, in as far as they are calculated to add to that waste of excitement, and that very vitiation, to which we have referred? Is not the abstinence, too, usually enjoined by physicians in the typhoid stage of the fever, for the same reasons, no less to be reprobated? Are we not led, upon the same principle, to condemn the prescription of *camphor*, *musk*, *opium*, *digitalis*, and other powerful sedatives, so frequently directed in this stage of fever? We refer to the ordinary mode and quantity in which these narcotics are administered in fevers by the greater part of practitioners; and who, forsooth, by a strange misnomer, denominate them *stimulants!**

The indiscriminate practice of *purging*, as advised in typhus fevers by Dr. Hamilton,† of Edinburgh, is, in our opinion, no less dangerous, by the debility it induces, and is not prescribed with sufficient caution by that distinguished practitioner, for whose opinions and practice, on most occasions, we entertain, and beg leave to express, our highest respect. Even the long continued exhibition of the various preparations of mercury and antimony, is, in the opinion of the writer, a no less dangerous and fatal practice in this advanced stage of fever. On the contrary, if the views we have taken be correct, after the indications which arise in the first stage of continued fevers have been fulfilled, in the means of accomplishing which most physicians are agreed; after the necessary evacuations by the lancet and other depleting means have been made, which are frequently called

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* For the evidence of the sedative effects of opium, see Dr. Bard's Inaugural Dissertation, Edinburgh, 1765, also Dr. Monro's Experiments on Opium.

† See his valuable work on the use of Purgatives.

for, both in the invasion and in the progress of fever; after the stomach and bowels have been cleansed, and due regard has been paid to the no less important function performed by the skin, our attention should next be given to the two following objects, and which the practitioner should never lose sight of when the typhoid state of fever has actually arrived: 1st. To preserve the natural powers of the system, and carefully to guard against every further waste of excitement; 2d. By suitable antiseptic nourishment, and other means, including external as well as internal applications, to preserve the circulating fluids from those morbid changes to which they constantly and rapidly tend in all fevers of the continued type, especially in those arising from *contagion*, which, in a peculiar manner, depresses and exhausts the vital powers. In this advanced or typhoid state of fever, characterized by a disturbed state of the brain and nervous system, showing itself in delirium, watchfulness, or irregular and interrupted sleep, frequent sighing and subsultus tendinum; attended with an increased but feeble circulation, hurried and irregular respiration, with its usual consequences, an increased heat of the body and dryness of the surface; characterized, also, by a deranged state of the secretions and excretions, exhibiting themselves in an offensive breath, turbid urine, frothy and offensive discharges from the bowels, a foul sordes about the teeth and gums, discoloured lips, and a brown or a black appearance of the tongue; and, perhaps, added to these, a cadaverous and offensive smell of the whole body; in this condition of the system the means of fulfilling the indications before mentioned, are, 1st, To supply the patient with the most powerful stimuli both diffusible and permanent;

viz. the volatile alkali, æther, wine,* wine whey, porter, yest, bark,† Virginia snake-root, bitters, and the mineral acids, preferring each or either of these according to the peculiar circumstances of the case. We are aware that this practice is reprobated by many physicians as improper in this state of excitement, whatever may be the stage of the disease, or the circumstances that may have induced it. This leads us to observe that many physicians are not sufficiently attentive to discriminate between the *simple excitement* of the early stages of fever, which is characterized by the symptoms of inflammatory action, and is kept up by considerable vigour of the system; and the *complicated excitement*, which appears when the powers of life are greatly exhausted, and the disease has been long protracted. A corresponding want of discrimination appears in their practice; they, therefore, condemn in the *last* stage those means of excitement which are injurious in the *first;* and they approve in the last the continuance of the same depleting and debilitating means that have been found useful in the first: what! say they, administer *wine*, *bitters*, or *bark* in this quickened circulation, attended with a hot and dry skin? We answer, that in such typhoid state of body, in this exhausted state of the vital powers, the remedies that have been enumerated are among the most effectual means of reducing that very heat of skin, and of diminishing that increased excitement of the whole system, which, as we have before remarked, are frequently both ascribable to the morbid sensibility of the heart and vessels to their vitiated con-

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* The reader will find some pertinent practical remarks on the quantity of wine which may be safely and advantageously administered in this stage and character of fever, in Moore's Med. Sketches, p. 13, 517, &c.

† See Moore's Med. Sketches, p. 509.

tents; and that this sensibility being counteracted, the circulation is necessarily reduced in frequency, the respiration becomes less hurried, and the heat of the system, which is ever in proportion to the circulation and rapidity of respiration, is, consequently, diminished.

But, 2dly. We should be no less attentive to the state of the fluids than we are to counteract the morbid excitement of the solids; with this view, attention should be daily given to the bowels for the purpose of evacuating their offensive contents, especially of the lower tract of the intestinal canal; for these malcontents being retained, not only in some instances become the sources of irritation to the intestines themselves, producing diarrhoea, but by their absorption into the mass of circulating fluids, which are thereby rendered still more malignant, they necessarily constitute fresh sources of febrile excitement. Evacuations from the bowels, however, are not to be obtained at that expense of the powers of the whole system, which the means recommended by Dr. Hamilton are calculated to produce; on the contrary, at this advanced period of fever, we should just as readily think of putting a lancet into the patient's arm as emptying his bowels by the active purges he has directed: these, too, we suppose to have been already administered in the first stages of the disease. Enemata, or, at most, the occasional use of small doses of rhubarb and magnesia, or some other mild cathartic are only, in our opinion, admissible at this period of the disease. For the united purposes of preserving the surface in a perspirable state, of diminishing its temperature when excessive, and of removing the offensive materials which are excreted by the skin, and constantly accumulated upon it, the body should be regularly cleansed once or twice in the day, by ablutions of vinegar and water, which should be applied either tepid or

cold, according to the temperature of the body;* and should the skin remain dry, after such ablutions have been made, fomentations of vinegar and water applied to the extremities, and steadily persisted in, are among the most effectual means of relaxing the surface, at the same time that they are calculated to allay much of that distressing restlessness which attends this stage of the disease. Upon the same principle of correcting the state of the fluids, the nourishments directed should be exclusively of the *vegetable* kind, as best calculated to resist that putrescent tendency which manifests itself in this state of body; for this purpose, *arrow root, sago, tapioca, indian* or *oatmeal gruel*, rendered palatable by the plentiful addition of wine, and some of the most grateful aromatics, should be hourly administered in this exhausted state of the system. The bedding and the dress of the patient, especially if he wear flannel next the skin, which is the preferable clothing in this form of fever, should also be frequently renewed. For the purpose of controlling that restlessness which usually appears in the evening exacerbation, and of procuring sleep, *an occasional anodyne* may, in many instances, be administered with the most beneficial effects; but the indiscriminate use of opium or laudanum throughout the day, and through the whole progress of the fever, with the view to their supposed stimulant effects, cannot be too severely reprobated; nor have we ever witnessed the stimulant effects ascribed to the fashionable *camphorated julep*, and other preparations of that medicine so often had recourse to; but we can indeed say, that we have, in very many instances, witnessed its debilitating, and, as we believe, its fatal effects, in the typhoid state of fever. Such is the practice the author of these remarks has

* See Currie and Jackson on cold bathing in fevers.

pursued, for many years past, in the typhus fever of this city, the typhoid stage of scarlatina, peripneumonia typhodes, and in other febrile diseases; and he can bear the most unequivocal testimony in favour of its safety and success.

RECENT AMERICAN PUBLICATIONS.

An Inaugural Dissertation on the Proximate cause of Death from suspended Respiration, in Drowning and Hanging, with the means of resuscitation. Submitted to the examination of the College of Physicians and Surgeons of the University of the State of New York, on the 3d of May, 1814. By Ansell W. Ives. New-York. 8vo.

Experiments on the Principles of Life, &c. &c. By M. Le Gallors, M. D. P. Translated from the French, by N. C. and J. G. Nancrede, M. D. Philadelphia. 8vo.

TO CORRESPONDENTS.

The editors were in expectation of inserting in the Register a Biographical Account of the late Dr. Richard Bayley, formerly Professor of Surgery in Columbia College, and author of a Treatise on the Yellow Fever which prevailed in New-York, in 1795, and of other Tracts. The only reason they can assign, singular as it may seem, for not having preserved some memorial of this nature in behalf of the memory of this distinguished teacher and practitioner of Surgery is, that they have in vain endeavoured to procure the requisite materials.

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FINIS.

ERRATA.

Vol. III. Page 230, line 28, for *rural* read *civil*.

Vol. IV. Page 432, last line from the bottom, for *a bence* read *absence*.

434, line 27, for *topic* read *tropic*.

575, line 4, for *sneers of fastidious and factitious impertinence* read *sneers of impertinence*.

584, line 6, for *space* read *share*.

605, line 7 from the bottom, for *institution* read *instruction*.

